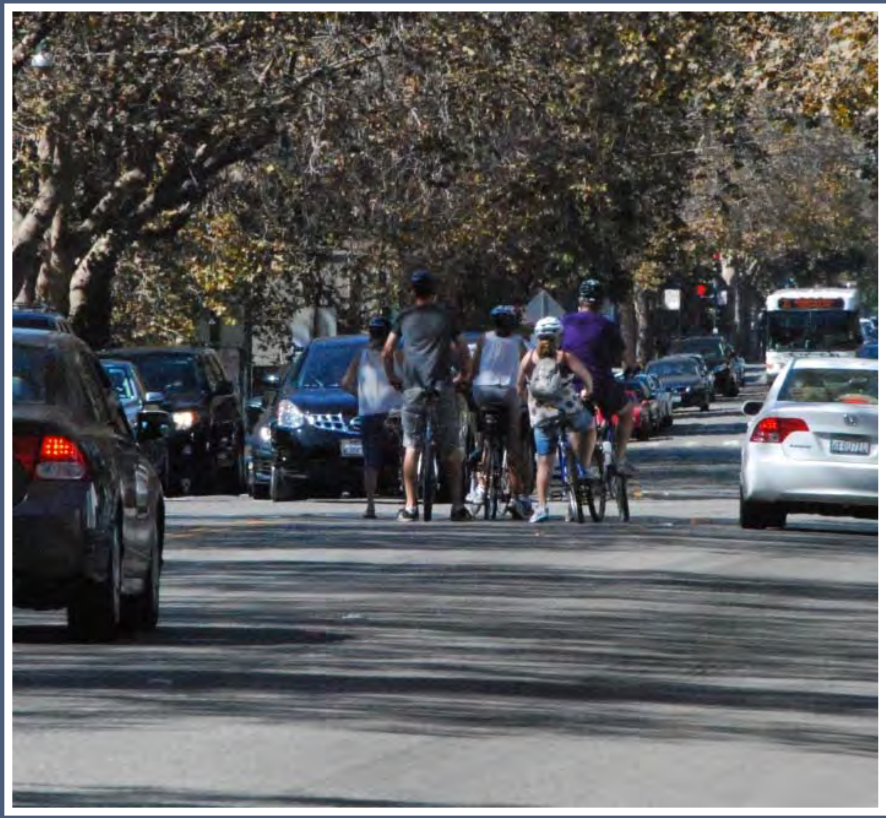








Central Avenue

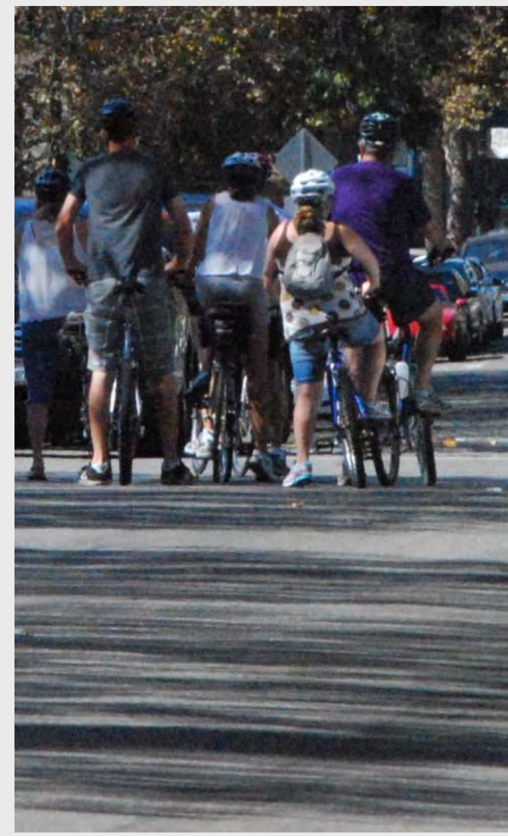
Recommended Safety Improvements

City Council | February 24, 2016

Agenda

- Overview & Purpose
- Outreach
- Safety Improvement Recommendations
- Next Steps
- Q & A

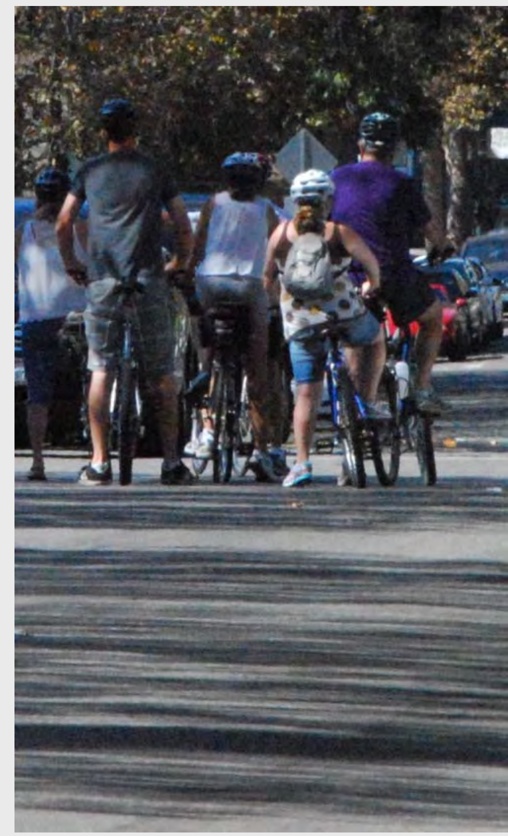




Overview

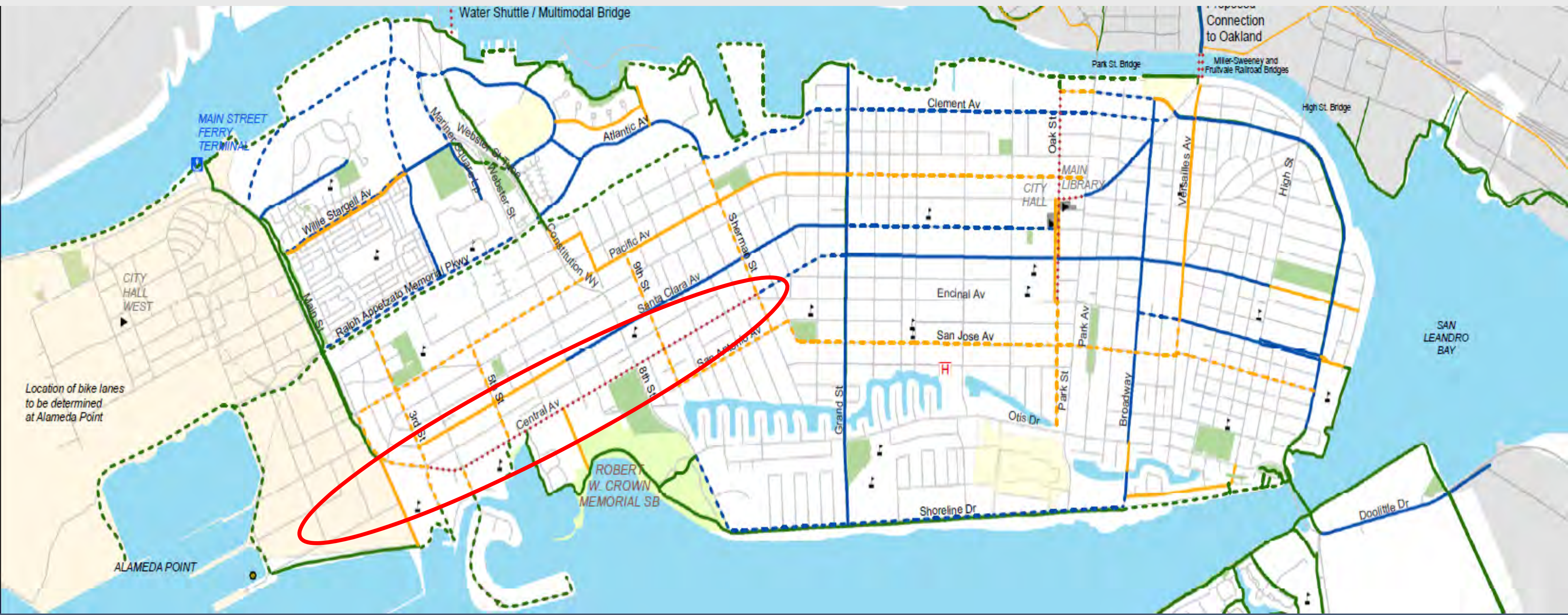
- Creates Substantial Safety Benefits in Area Concentrated with Schools
- Adds Improvements Making It Easier and Safer to Walk, especially at Encinal High
- Installs Continuous Bikeway for 95% of Corridor Compared to 12% Existing
- Creates Bay Trail connection
- Implements General Plan and Bike Plan
- Minimizes Motorist Delay
- Provides Net Gain of Parking - No Loss Near Webster Street





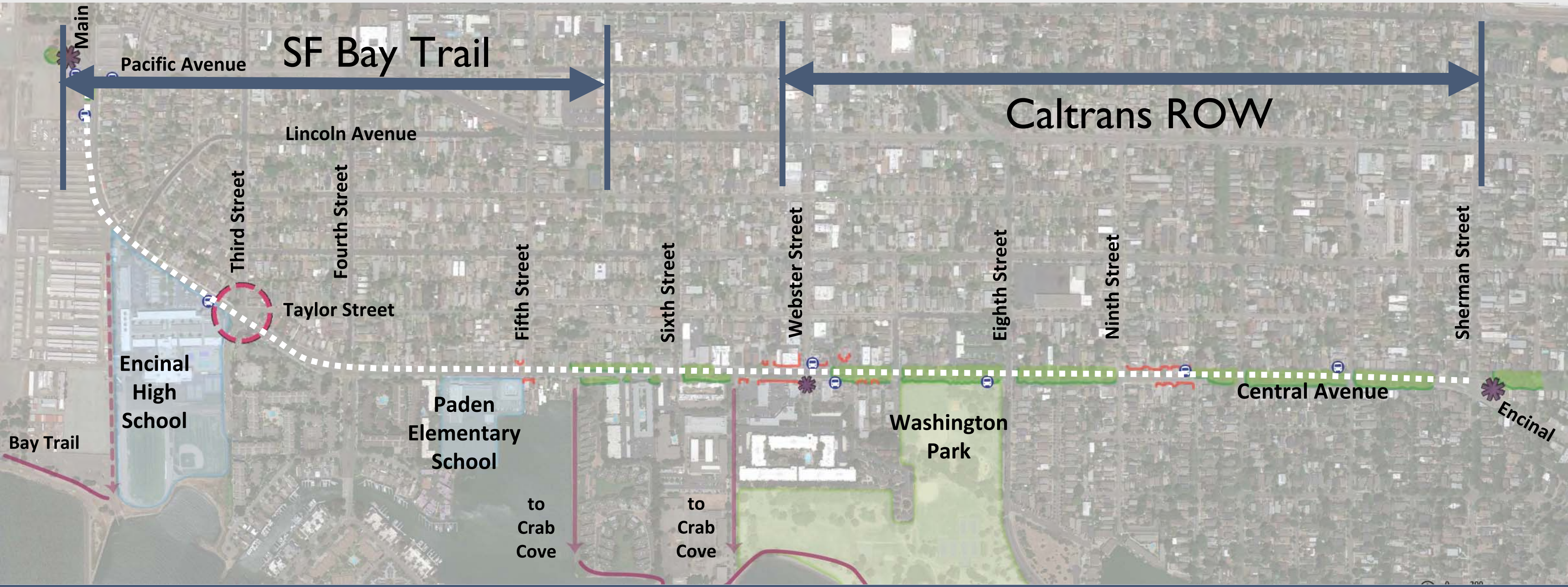
Implementing General Plan

- General Plan - Transportation Element (2009)
  - Truck Route
  - Transit and Bicycle Priority Streets
- City of Alameda Bicycle Plan (2010)



Issues to Balance

- 1.7 mile study area / residential area
- AC Transit, truck, commercial, jobs and ferry access
- Partial SF Bay Trail / Partial Caltrans facility – SR 61
- Multiple schools (over 5,000 students/12 schools)



Schools

- ***West Alameda*** (approx. 4,000 students)
  - Academy of Alameda School ★
  - Alameda Community Learning Center ★
  - Alameda Science and Technology Institute ★
  - **Child Unique Montessori School** ★
  - **Encinal Junior/Senior School** ★
  - Island High School ★
  - Nea Community Learning Center ★
  - **Paden Elementary School**
  - Ruby Bridges Elementary School



- ***Central Alameda*** (approx. 1,150 students)
  - Maya Lin School ★
  - Franklin Elementary School
  - Wood Middle School ★

Alternatives Considered

- Do nothing different – leave as is – status quo
- Santa Clara Avenue
- Sharrows
- East End Section:
  - Buffered Bike Lanes
  - Separated Bikeways
- Education/Enforcement
- Washington Park Bike Lane and Route



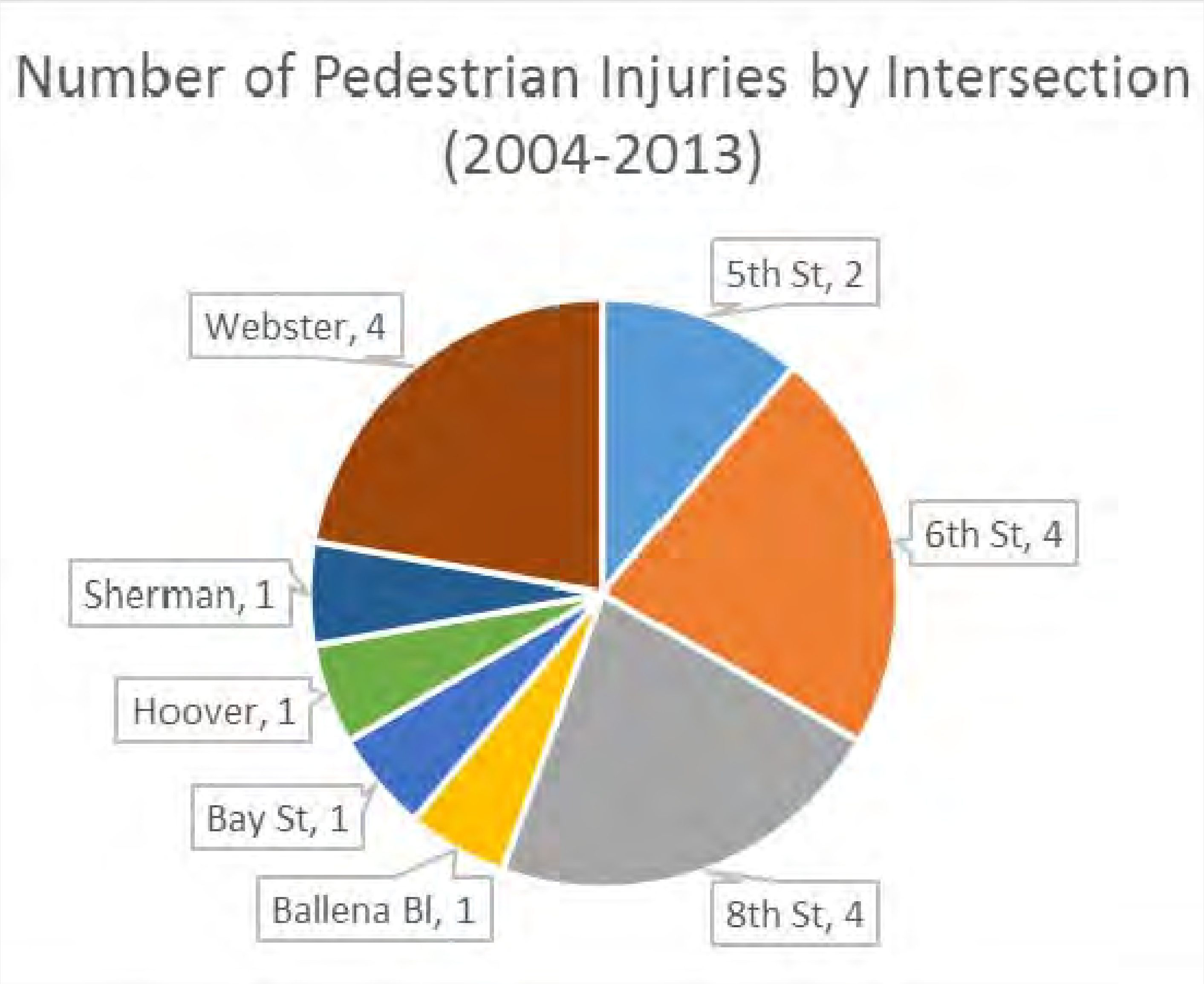
Safety

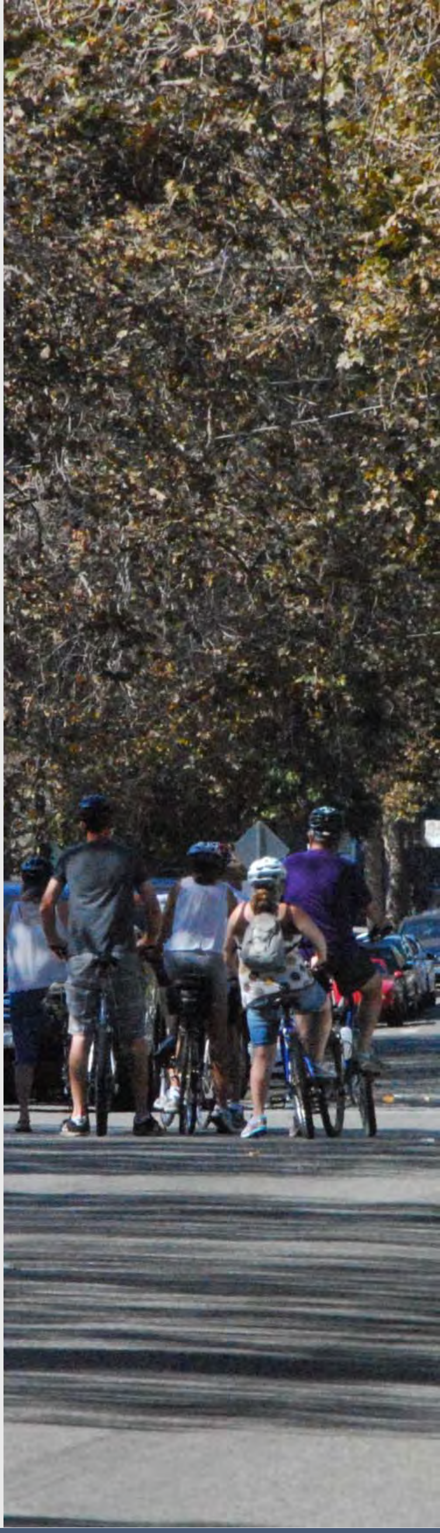
- Roadway Safety
  - Actual Speeds: 30-33 mph
  - 89 injuries from collisions past 10 years
    - 18 walking = 20% (16% citywide)
    - 22 bicycling = 25% (16% citywide)
  - Bicycling/walking injuries = 45% (32% citywide)
  - Study Area mileage = 1.4% of citywide streets
  - Study Area injuries = 4.1% (compared to citywide injuries)



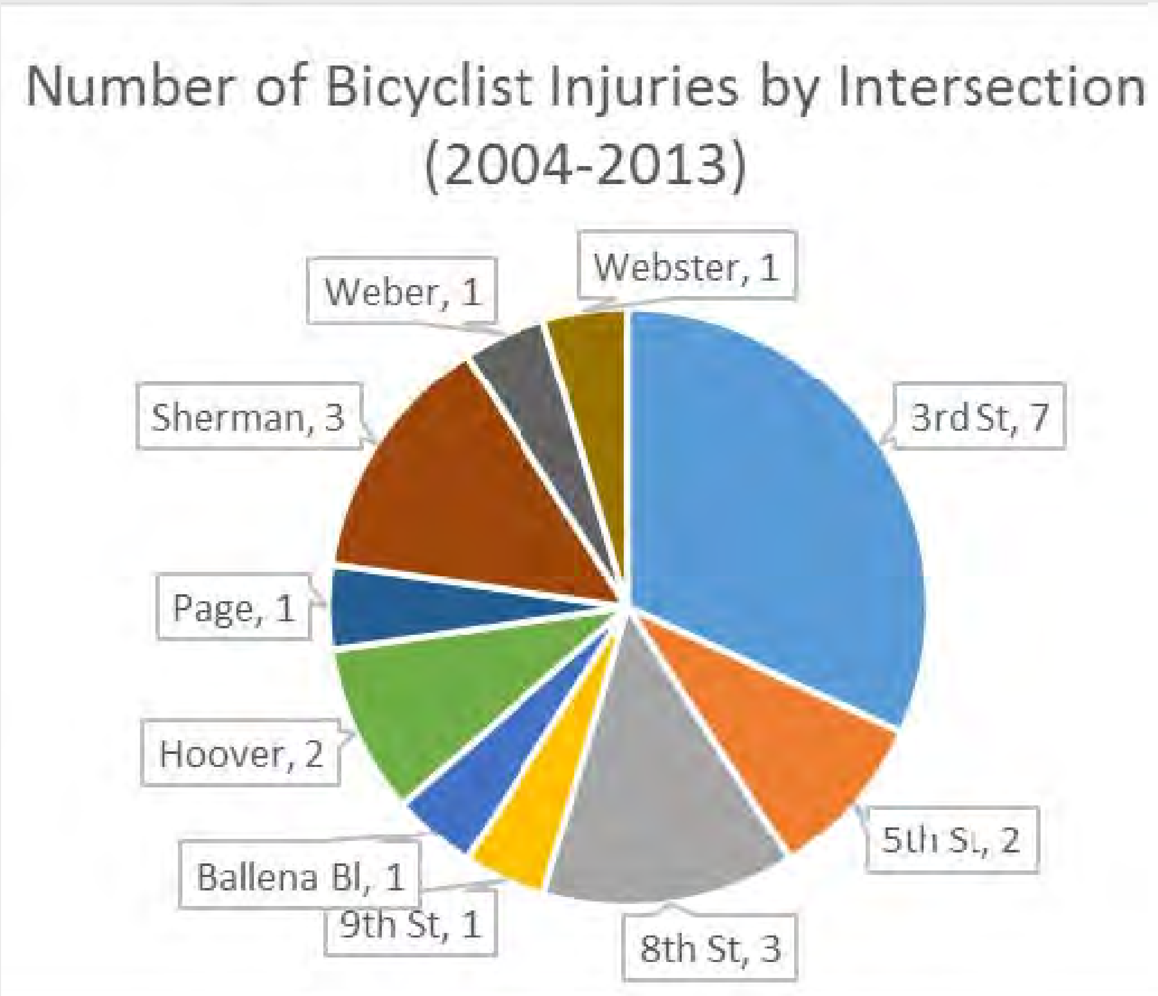


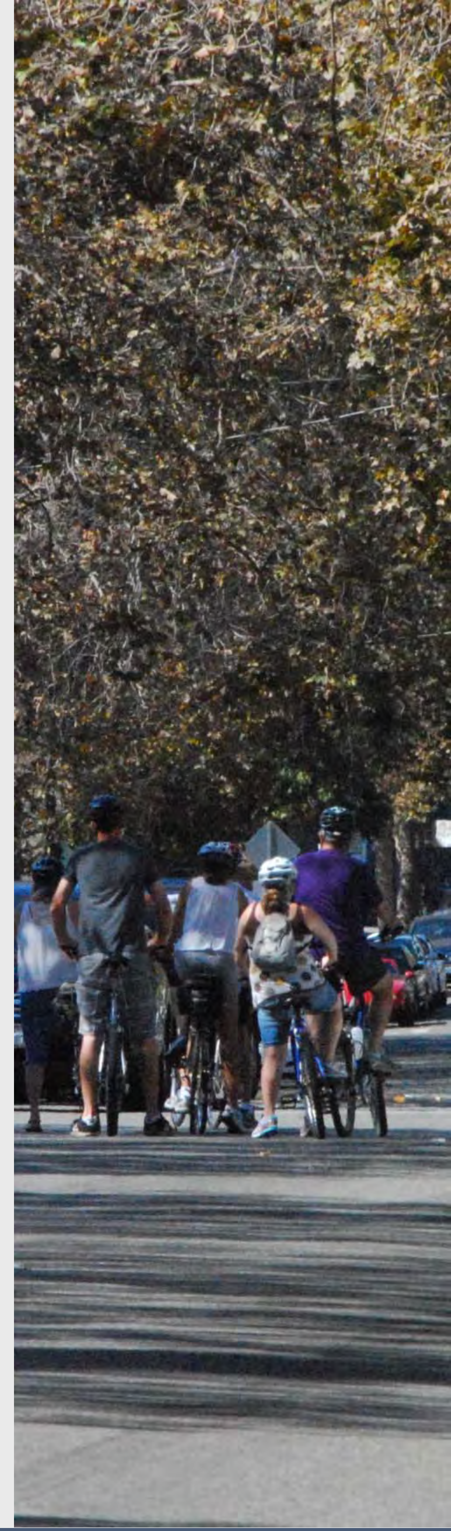
Safety: Ped Injuries at Uncontrolled Intersection and Highly Concentrated Areas



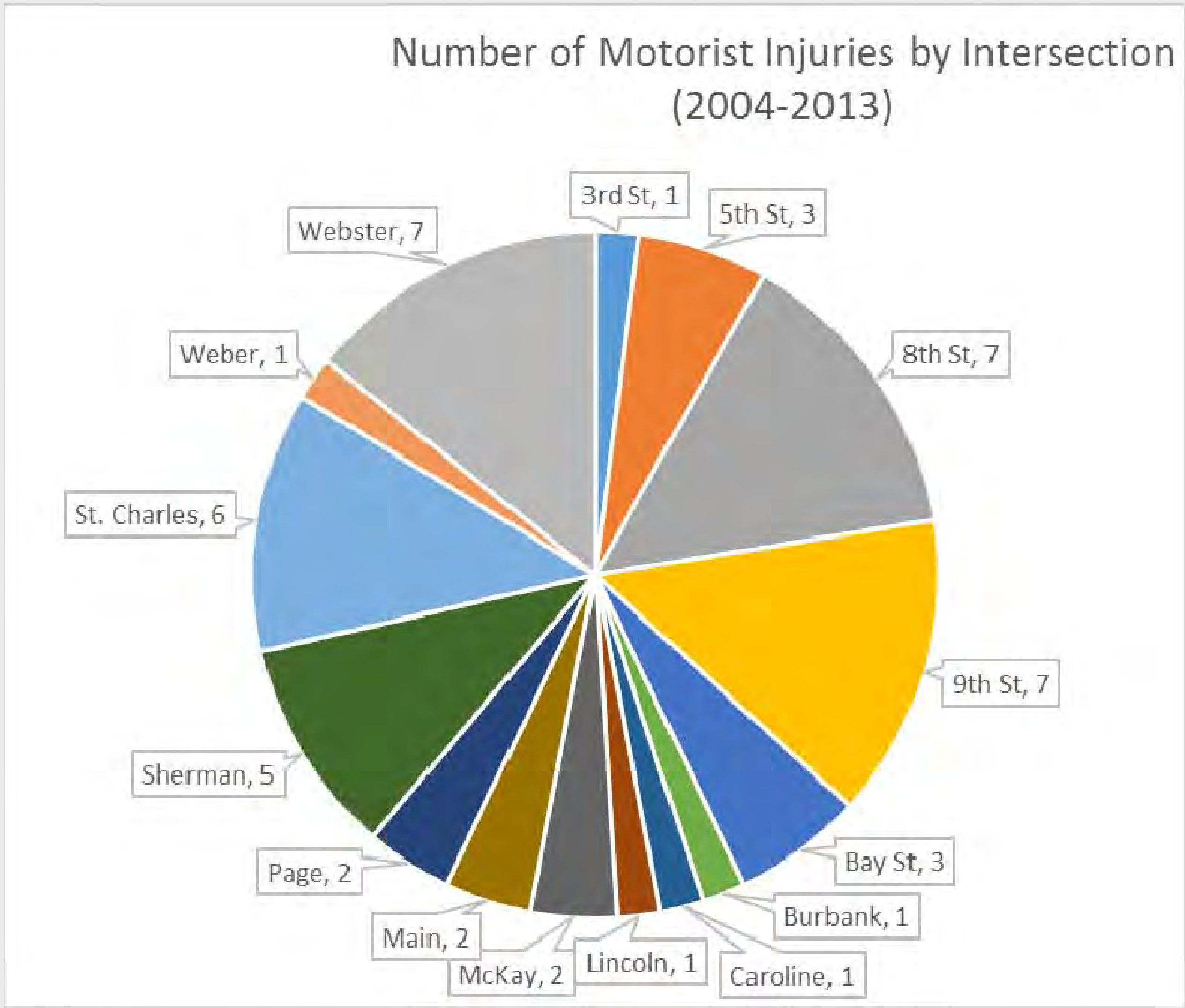


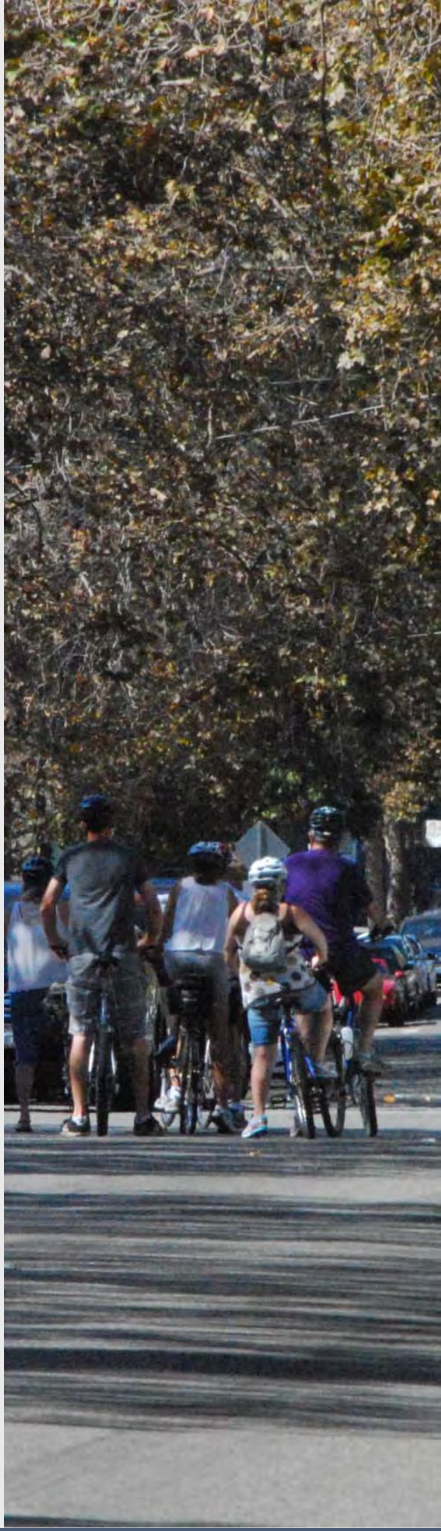
Safety: Bike Injuries Concentrated at Third Street near Encinal High and 5 out of 7 during Drop-Off/Pick-Up Times





Safety: Motorist Injuries More Dispersed throughout Study Area





Overview: Stakeholder Support

- Caltrans (owns Sherman-Webster)
- Paden School (315 students)
- Encinal High School / Junior Jets (1,330 students)
- AUSD Superintendent
- Alameda PTA Council
- San Francisco Bay Trail (proposed 500 mile trail)
- Bike Walk Alameda



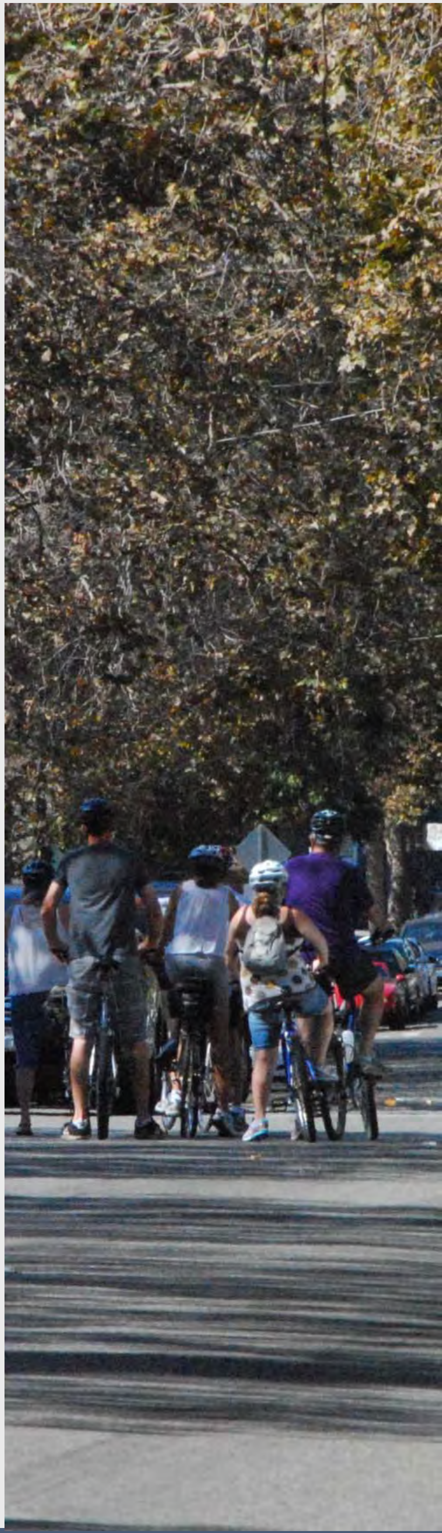
Overview: Business Concerns

- Westbound delay at Webster Street (Concept: Will modify signal)
- Westbound delay at McKay Avenue (Concept: Left-turn pocket at McKay Avenue)
- Delivery concerns at Webster Street liquor store (Concept: Deliveries can proceed as currently occur)
- Delays from concept (Concept: Minimizes motorist delay)



Outreach: Process

- Project Email List Serv: 500+ emails and growing
- Open Forum: http://alamedaca.gov/public-works/open-forum - attracted 531 visitors
- Advisory Committee: met three times and individually
- Community Workshops: April, June and September
- Engineer Reviews: five different teams
- Web Page: http://alamedaca.gov/public-works/central-avenue-complete-street
- Transportation Commission Meetings: May and Nov.
- Commission on Disability Issues: December
- City Council: Recommended Concept



Concept: Goals

1. Encourage bicycling and walking
2. Improve safety
3. Improve the streetscape
4. Traffic calming
5. Encourage transit use
6. Revitalize West Alameda
7. Improve public access to the SF Bay
8. Minimize disruption to motorists
9. Improve truck access



Concept: Demographics

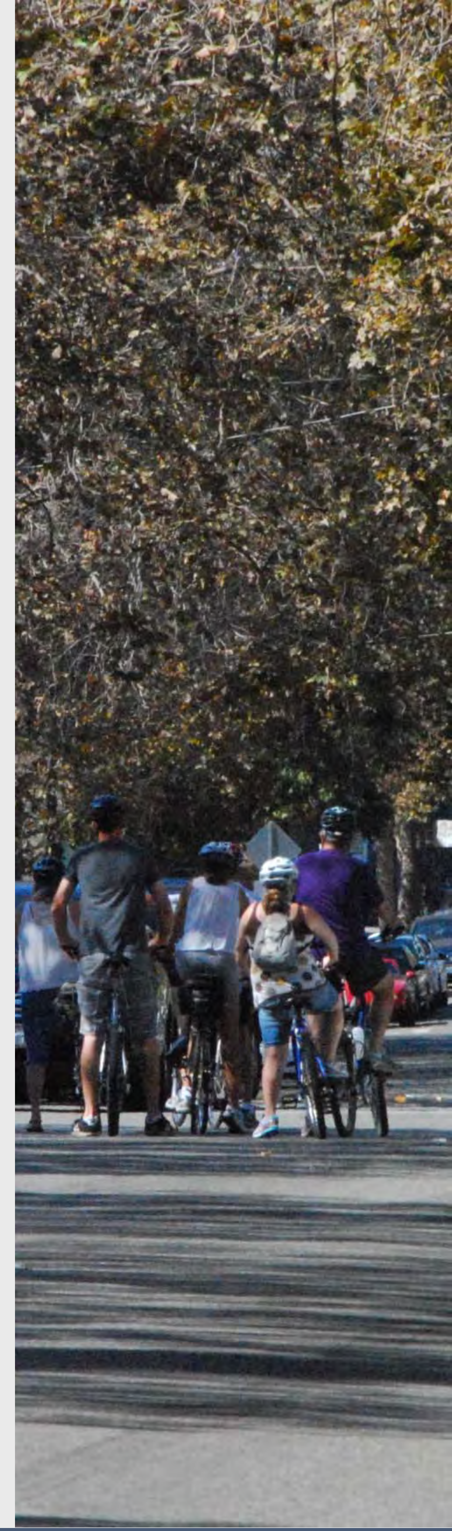


- **Walked to Work/School**
  - **Millennials: 32%**
  - **Generation X: 19%**
  - **Baby Boomers: 13%**

  Source: National Association of Realtors and Portland State

- **22% of young people plan on never getting a driver's license**

  Source: University of Michigan survey



Recommended Concept

- East End Section
  - Three Lane Street with Bike Lanes
- West End Section
  - Two-way Separated Bikeway
  - Westbound Bike Lane

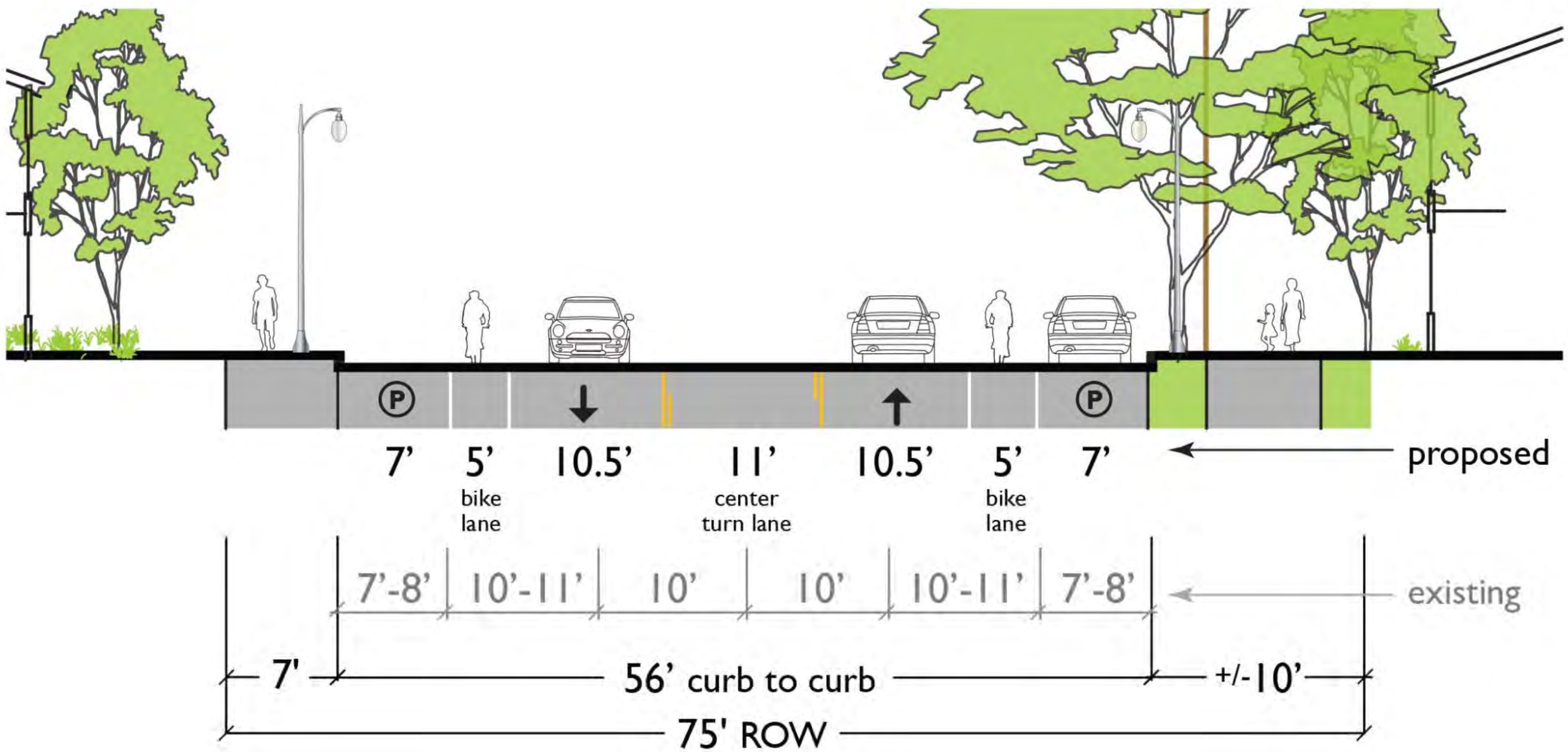


Concept: Bikeway (Sherman-Paden School)

- Do nothing different
- Sharrow markings
- Bike lanes + center turn lane
- Two-way separated bikeway
- One-way separated bikeway
- Buffered bike lanes



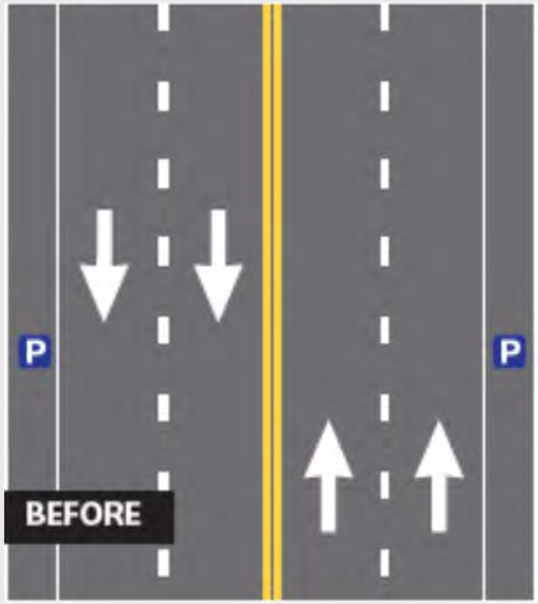
Concept: Sherman – Paden School

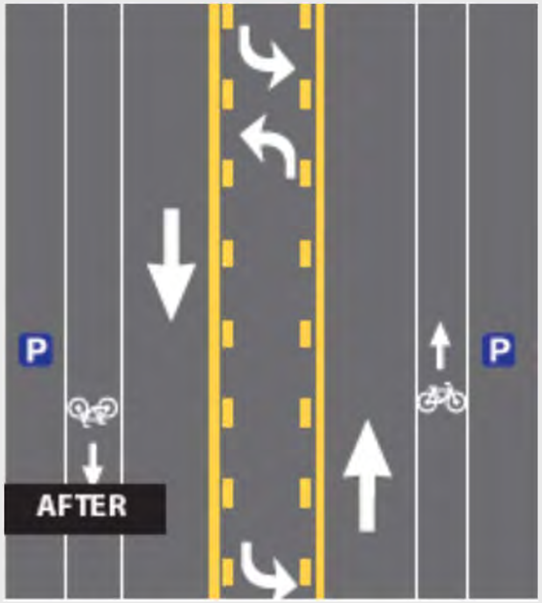


Concept: Benefits

According to FHWA:

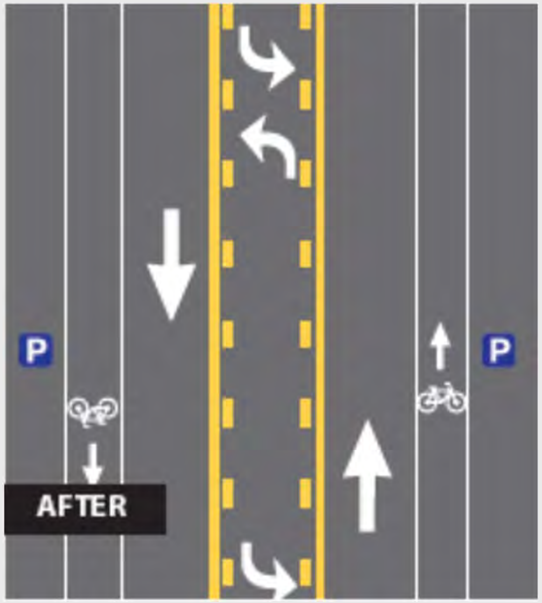
- Reduces collisions by at least 19%
- Reduces speeds by at least 3 mph
- Less severe collisions
- Fewer vehicle lanes to cross
- Better visibility of pedestrians
- Space for bicyclists
- Smoother travel flow





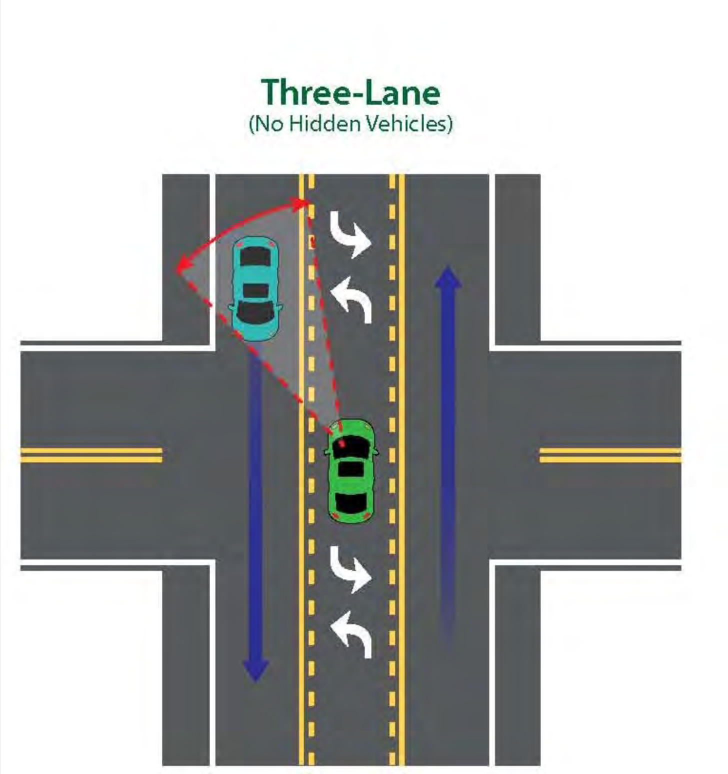
Concept: Pedestrian and Bicyclist Safety

- Fewer motor vehicle travel lanes to cross
- More visibility for pedestrians and bicyclists
- Space for bicyclists
- Slower vehicle speeds lead to fewer and less severe crashes
- Shorter pedestrian crossing distances



Concept: Motorist Safety

- Simpler crossings for side street motorists
- Fewer conflict points for sideswipe and rear-end collisions
- More visibility for left turning vehicles

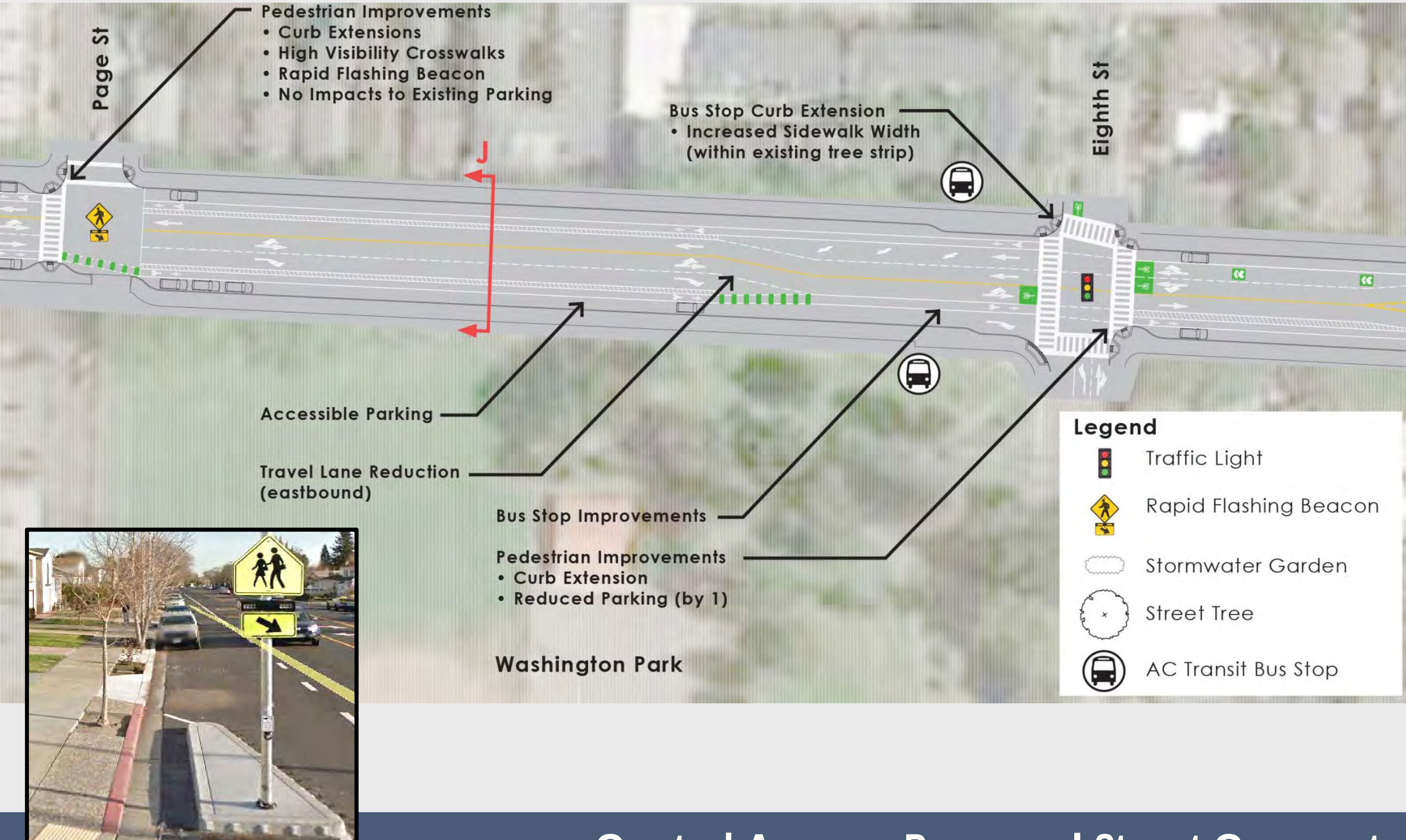


Concept: Improves Safety

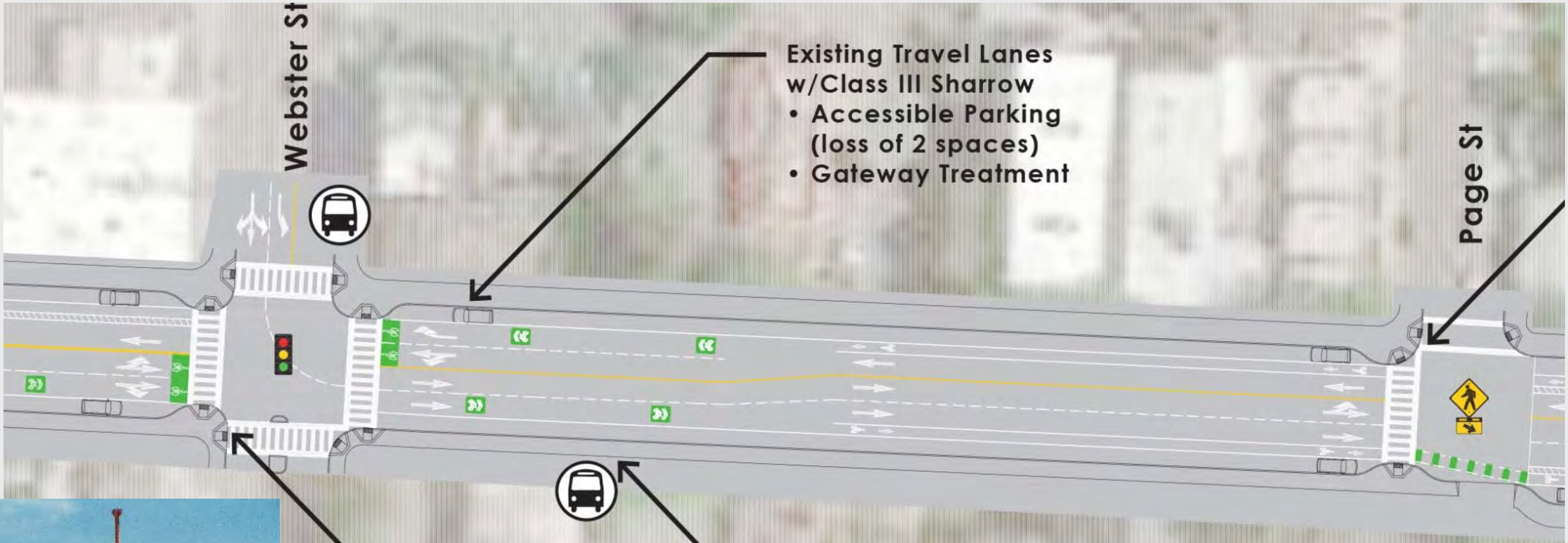
Federal Highway Administration (FHWA) identifies streets below 20,000 motorists/day as feasible for lane reduction.

Street Name	**Veh / Day**
Atlantic Ave. (Buena Vista to Constitution)	10,709
Broadway (Santa Clara Ave to Otis Dr)	12,332
Fernside Blvd. (Otis Dr to Washington St)	17,950
Central Avenue (max.)	**8,400**
Central Avenue: FUTURE (average)	**12,000**
Central Avenue: FUTURE (max.)	**16,000**

Concept: Page St - Eighth St

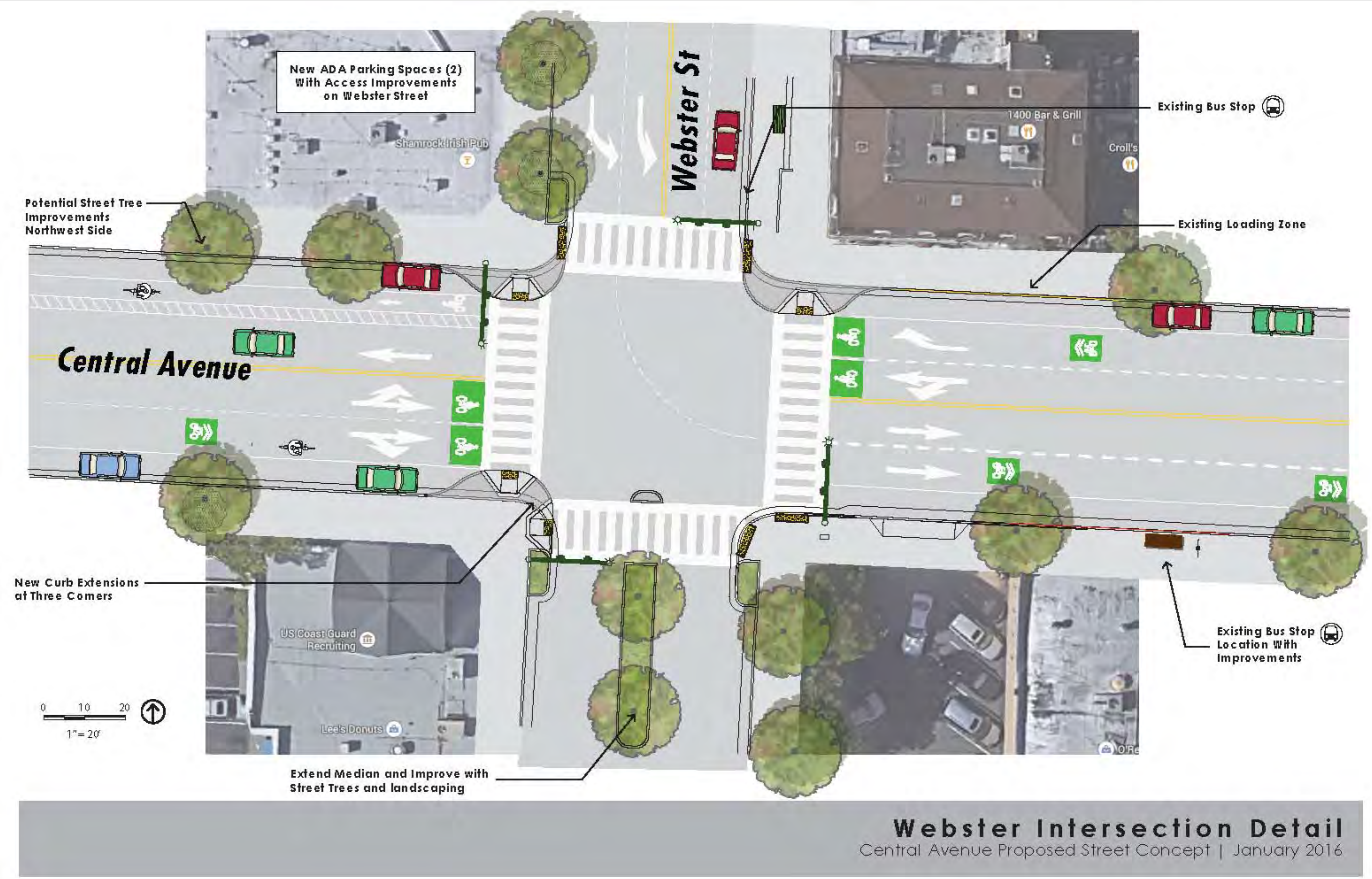


Concept: Webster St – Page St

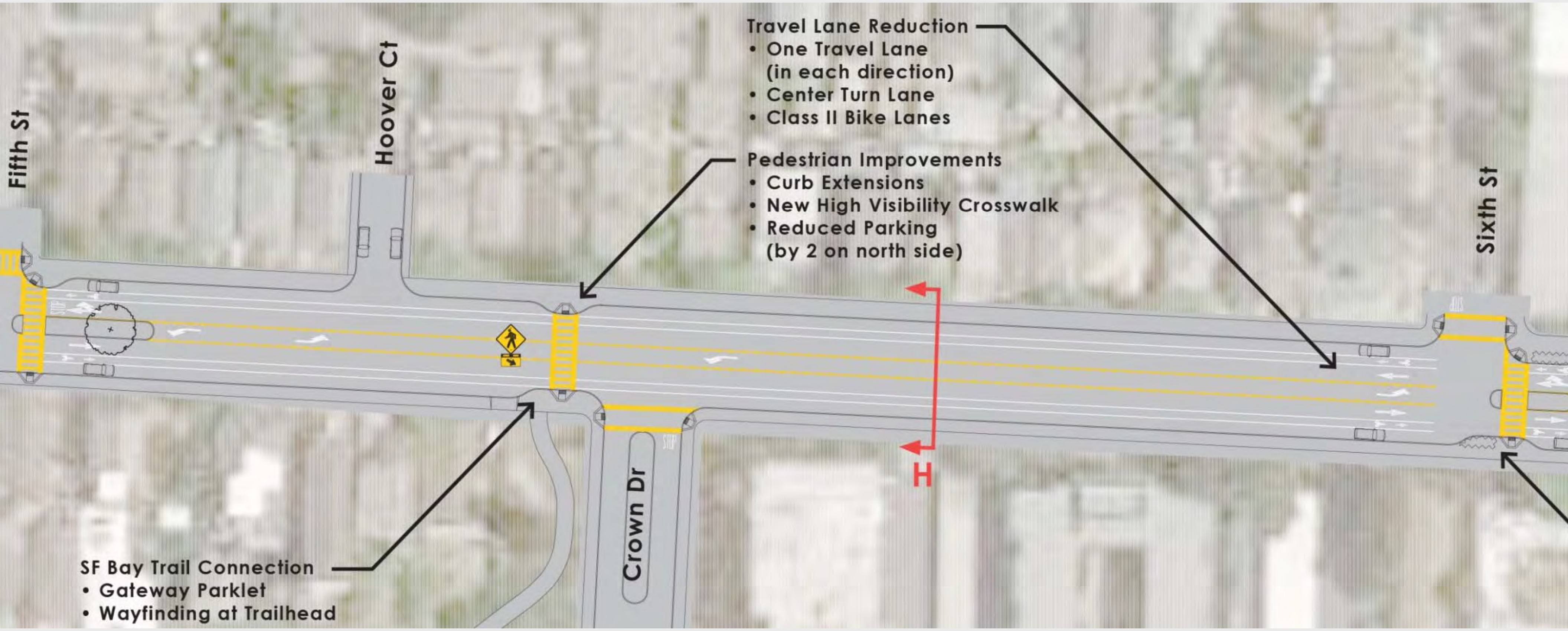




Webster Street – Two Lane Approaches and No Parking Loss

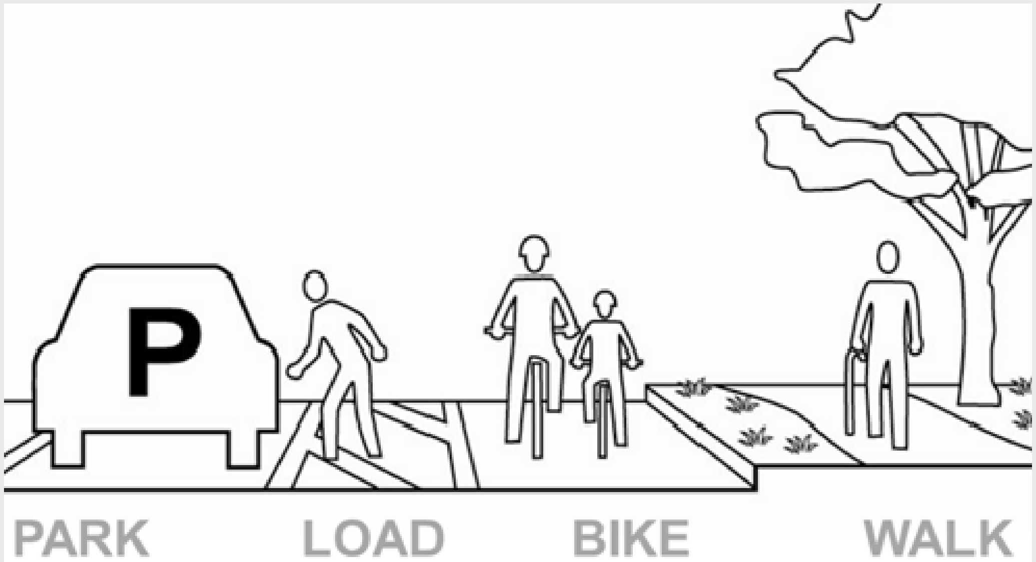


Concept: Fifth St – Sixth St



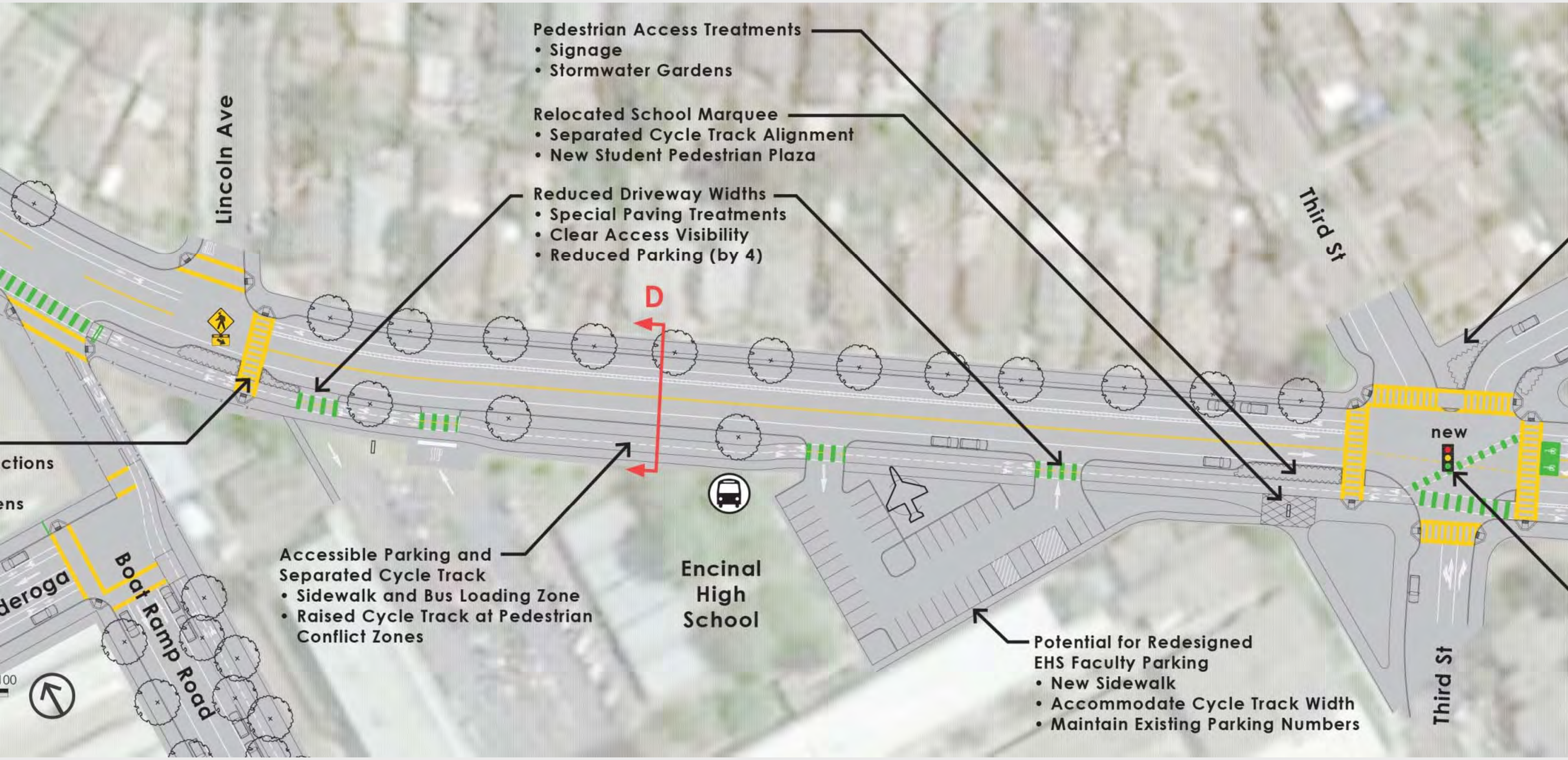
Concept: Bikeway - West End

- Two-way separated bikeway:
  - Alameda Point
  - Paden, Encinal and Junior Jets Schools
  - SF Bay Trail
- Westbound bike lane

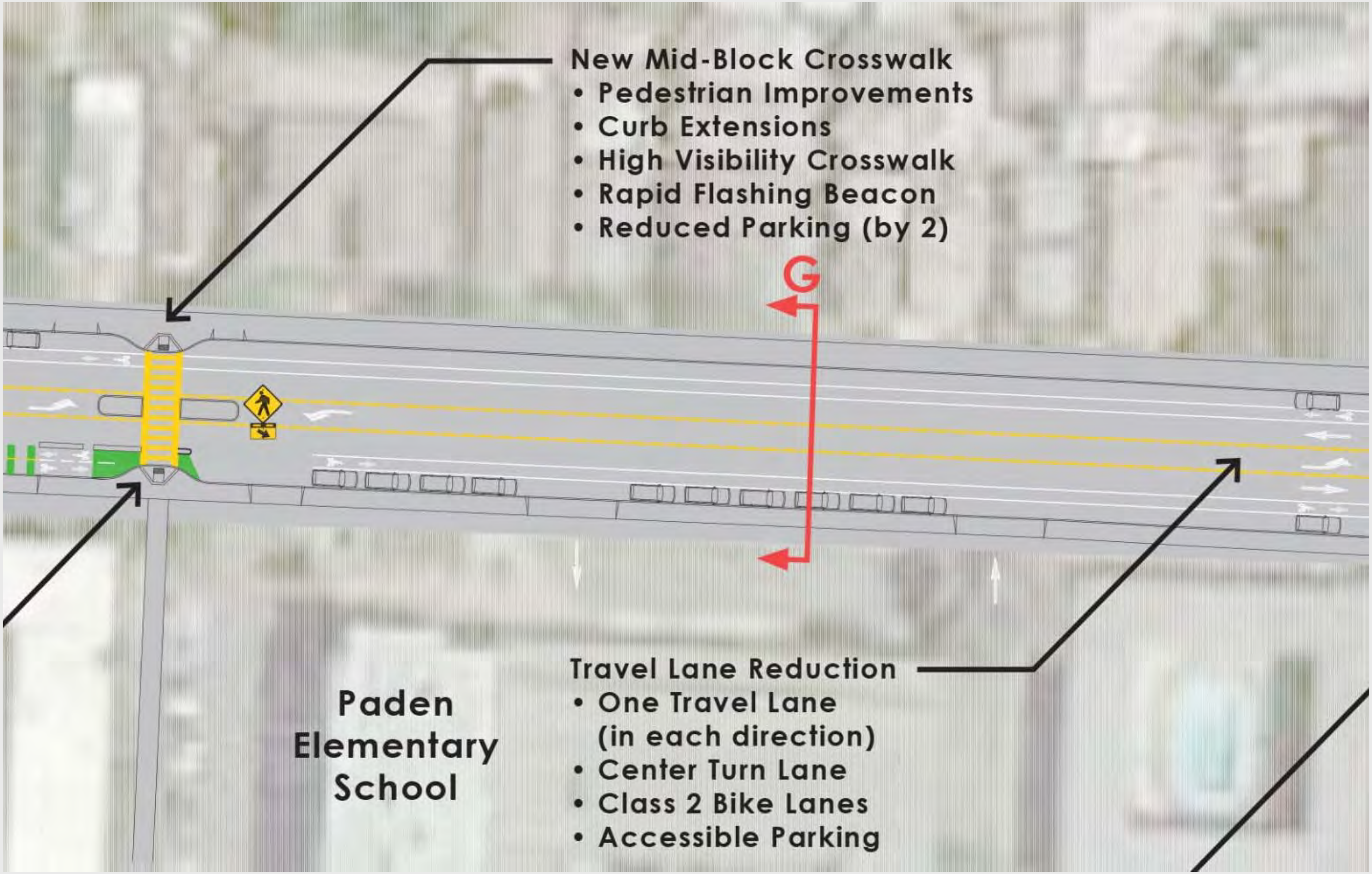




Concept: Encinal High School



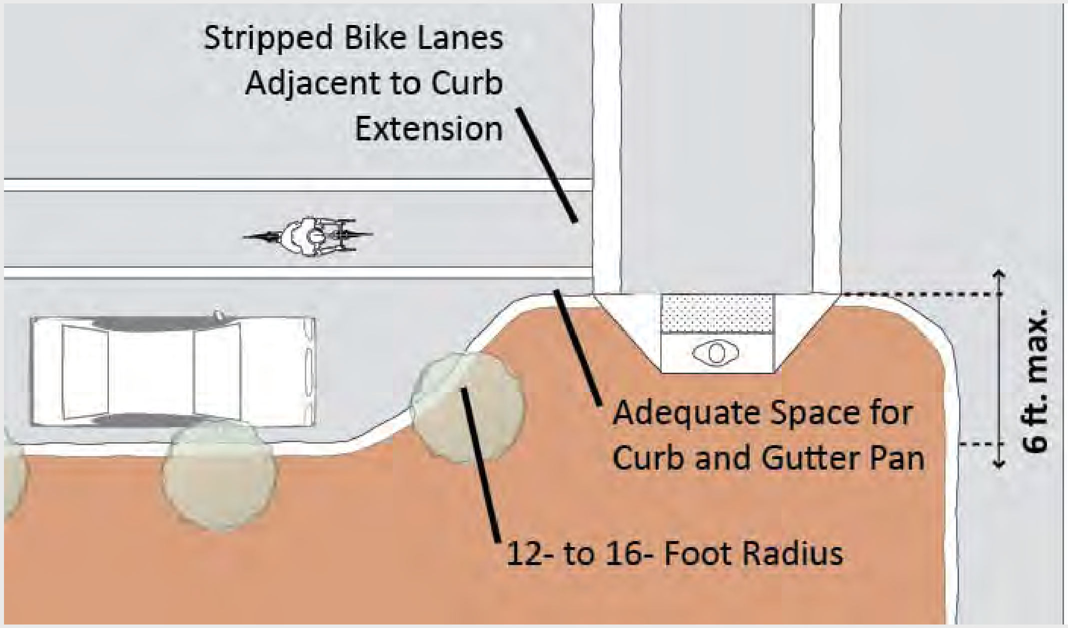
Concept: Paden School



Concept: Achieves Key Goals

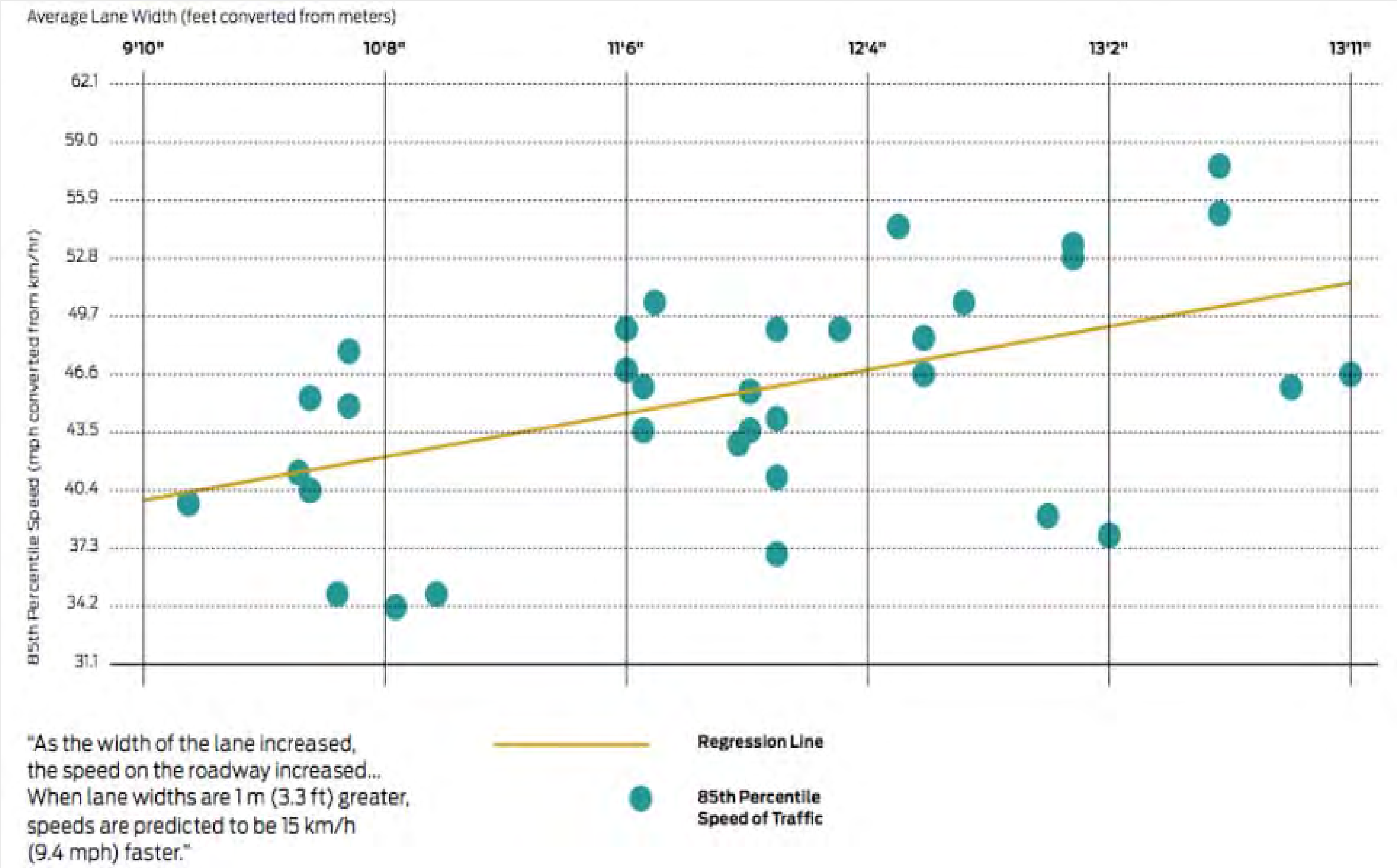
- **Safer Street – Center Lane**
- **Bikeway**
- **Pedestrian Improvements**
- **Streetscape Improvements**
  - **gateway, trees, stormwater, landscape**
- **SF Bay Trail Access**
- **Minimizes Motorist Delay**
- **Net Gain of Parking**





Concept: Addresses Concerns

- Accessible parking
- Bus/truck access
- WABA
- Minimal delay



Source: National Association of City Transportation Officials (NACTO) guidelines

Concept: Addresses Concerns

Year
2035
Conditions

Time Period / Direction	Existing Conditions	Three Lanes	Recommend-ation
Weekday AM Peak (7-9 AM)			
Eastbound	8.4 min.	9.4 min.	8.7 min.
★ Westbound	8.9 min.	22.4 min.	10.5 min.
Weekday PM Peak (4-6 PM)			
Eastbound	9.1 min.	20.0 min.	9.7 min.
Westbound	10.7 min.	14.5 min.	10.7 min.

Concept: Most Comparable Local Streets

- Broadway (mid-section)
- Atlantic Avenue
- Fernside (San Jose-Otis)
  - Two-way separated bikeway installed in 2009
  - Slower speeds
  - Increase in bicycling and driving
  - One bicyclist/motorist collision in bikeway

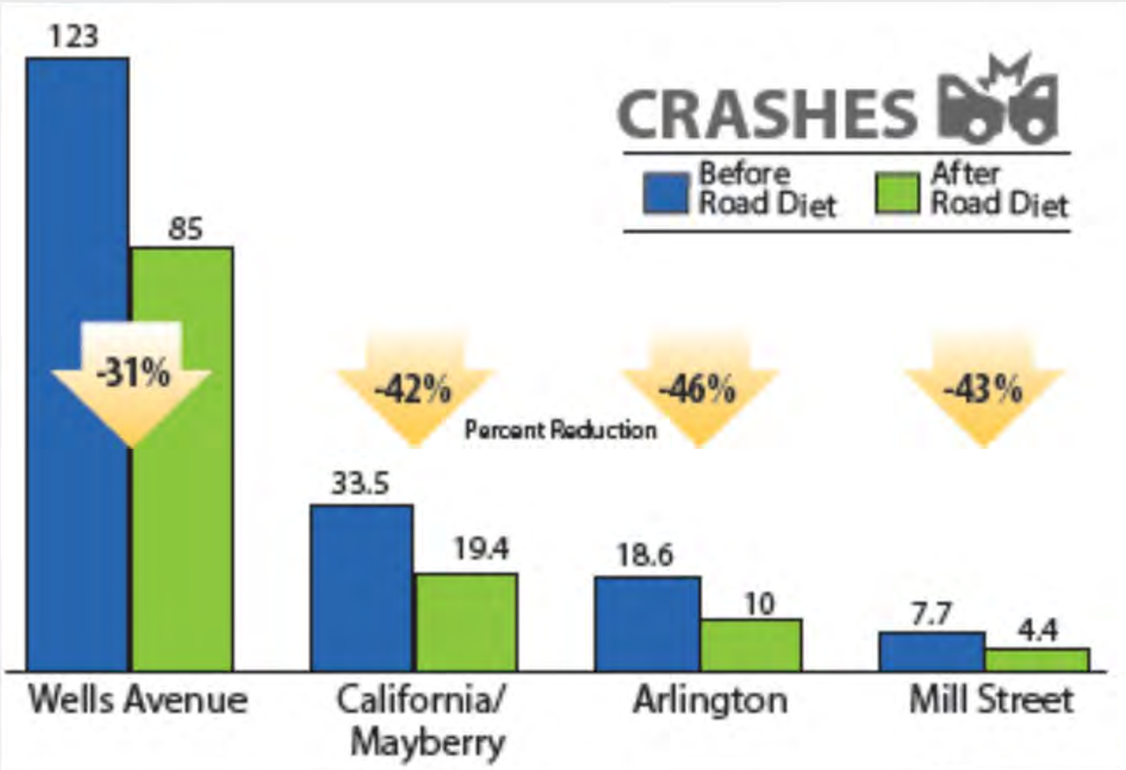


Concept: Shoreline Bikeway Example

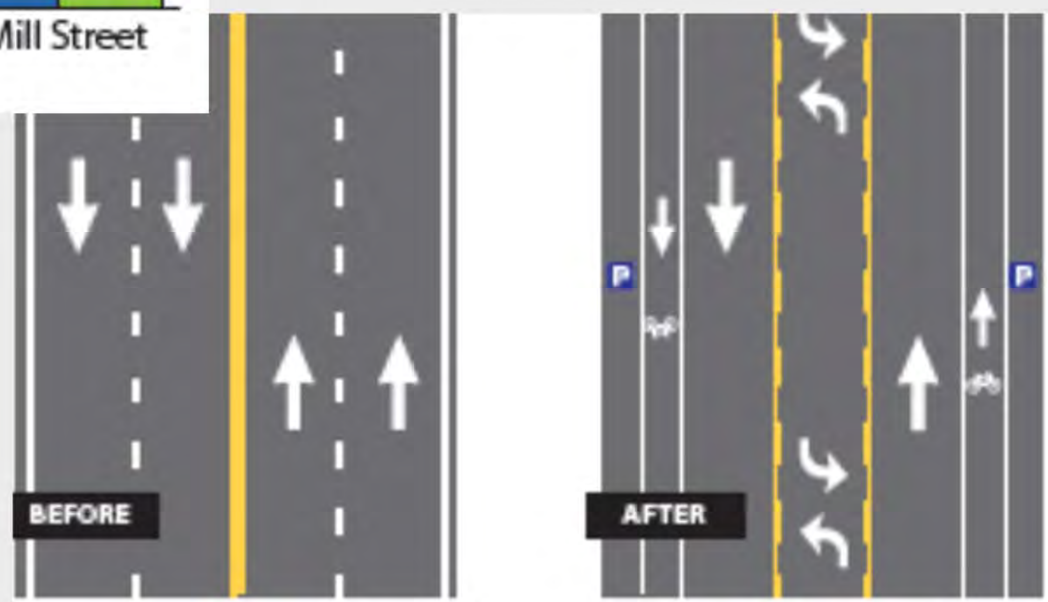
- Lane reduction from four to two or three lanes
- Two-way separated bikeway installed in March 2015
- Preliminary data:
  - Slower speeds
  - Fewer collisions
  - Decrease in driving
  - Increase in bicycling



Concept: Lane Reduction Safety



- Reno, Nevada corridors
  - Reduction in collisions between 31% and 46%



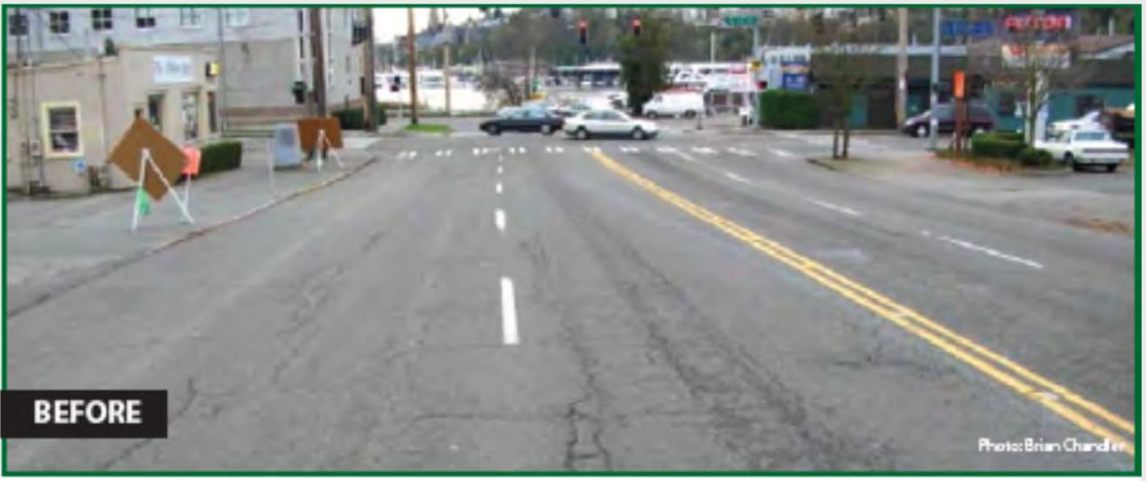
Concept: Lane Reduction Safety (cont.)



Ocean Park Boulevard looking east at 16th Street

- Santa Monica – Ocean Park Blvd
  - 65% reduction in collisions
  - 60% reduction in injury collisions

Concept: Lane Reduction Safety (cont.)





- Seattle, Washington – Stone Way
  - More than 80% reduction in top speeders
  - 14% reduction in collisions
  - 33% reduction in injury collisions
  - 80% reduction in pedestrian collisions
  - 35% increase in bicyclists
  - No motorist diversions

Concept: People Mean Business

Businesses Benefit from Bikeways

- ***New York City***: Retail activity increased 49% on 9th Avenue with a new bikeway, compared to 3% increase in the rest of Manhattan (Source: Measuring the Street, NY DOT)

- ***Salt Lake City***: Study show sales increased at local businesses with new bike lanes (Source: Division of Transportation)



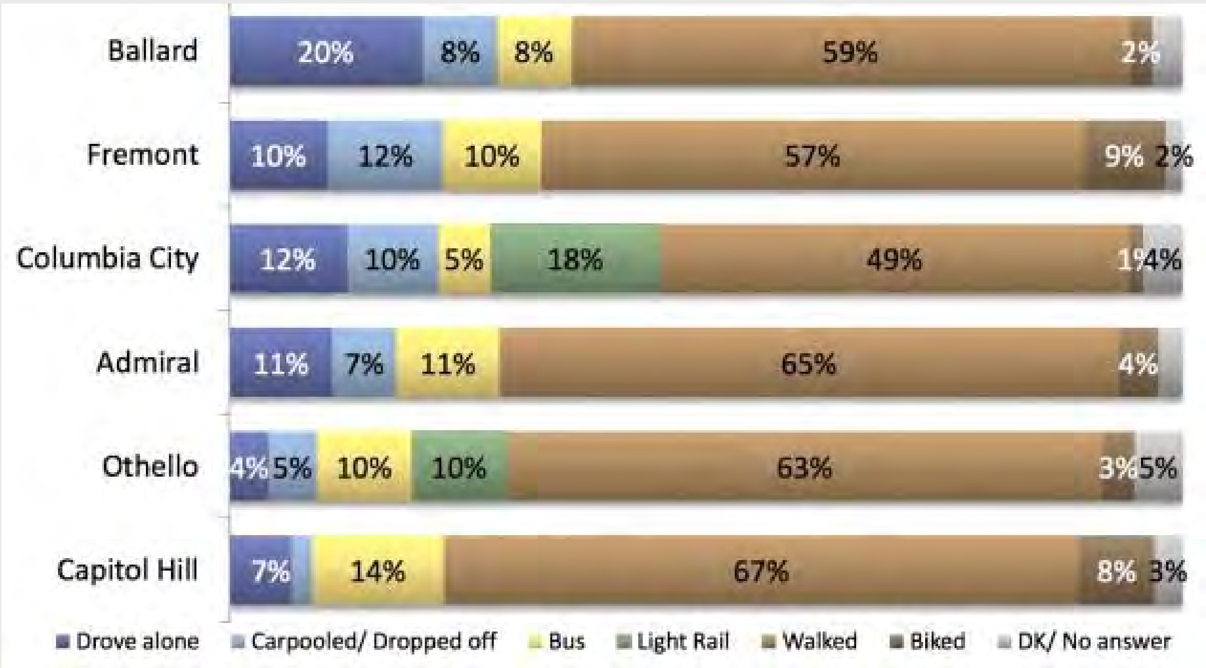
Concept: People Mean Business (cont.)

People walking and bicycling spend more money and shop more frequently!

- ***San Francisco***: People who walk to Polk Street spend more money overall than people who drive (Source: SFMTA)
- ***Portland***: Survey of businesses showed pedestrians & bicyclists spend up to 50% more than drivers (Source: Portland State University)
- ***Toronto***: Survey of merchants and patrons found people arriving by foot and bicycle visit the most often and spend the most money per month (Source: Clean Air Partnership)
- ***Davis***: Cyclists took more trips and spent more money per trip than drivers to a new Target store. (Source: UC Davis)

Concept: People Mean Business (cont.)

Majority of Customers Walk and Bike to Neighborhood Businesses



- ***Seattle***: 65% of residents get to their neighborhood business districts by walking and bicycling (Source: Seattle DOT)
- ***Bristol England***: 22% drove to shops (retailers thought 41%)
- ***Graz Austria***: 32% drove to shops (retailers thought 58%
- ***Dublin Ireland***: 10% on Grafton St and 9% on Henry St (retailers thought 13% and 19%, respectively)

Concept: People Mean Business (cont.)

- Denmark and Sweden





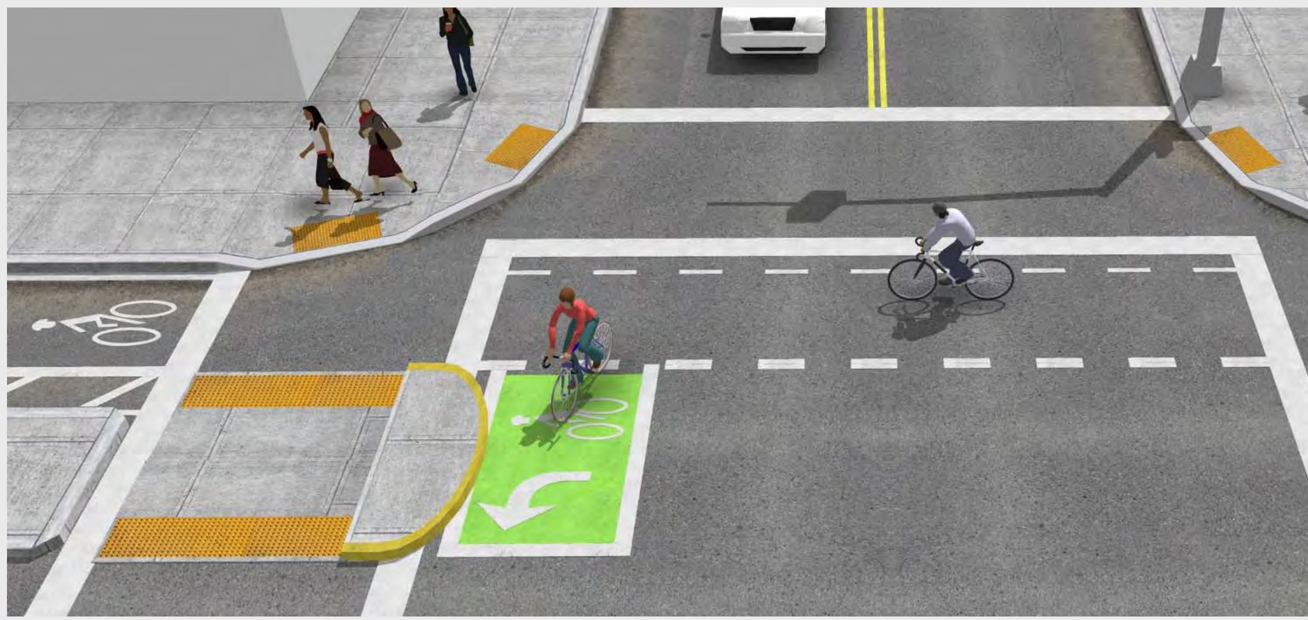


Recommendation

- Approve the Central Avenue concept
- Extend the westbound merge lane at Eighth Street
- Add four loading zones
- Use two-stage turn queue boxes

Source: NACTO

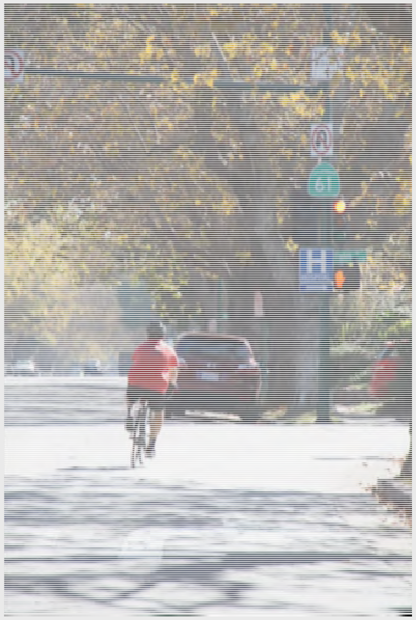




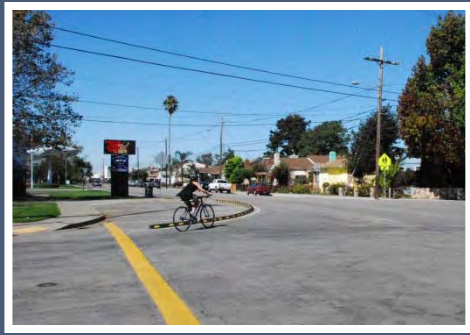
Next Steps

- City Council Approval
- Next Phase
  - Seek Funding
  - Design
  - Transportation Commission Design Approval
  - City Council Approve Construction Bid











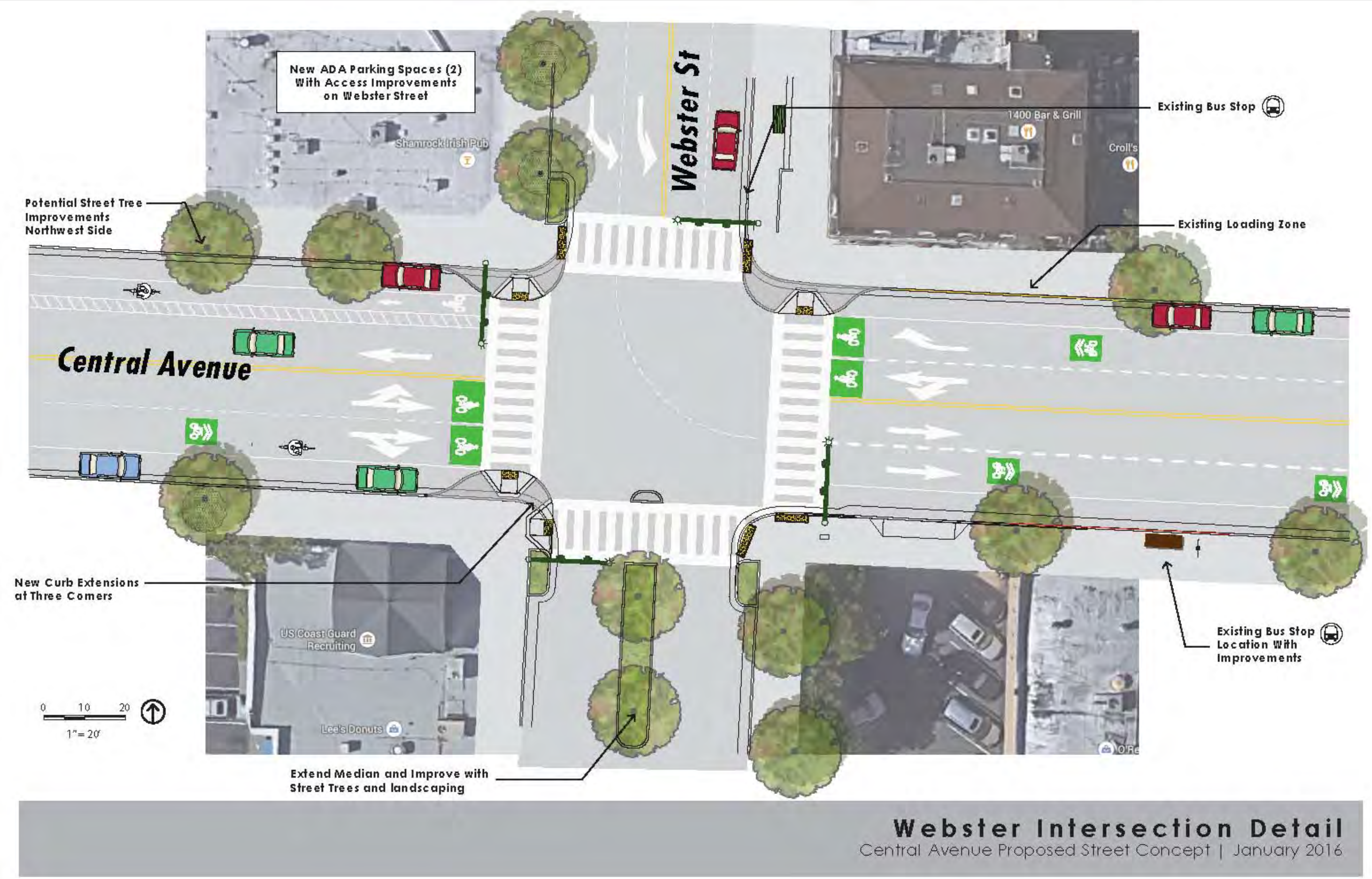


Central Avenue

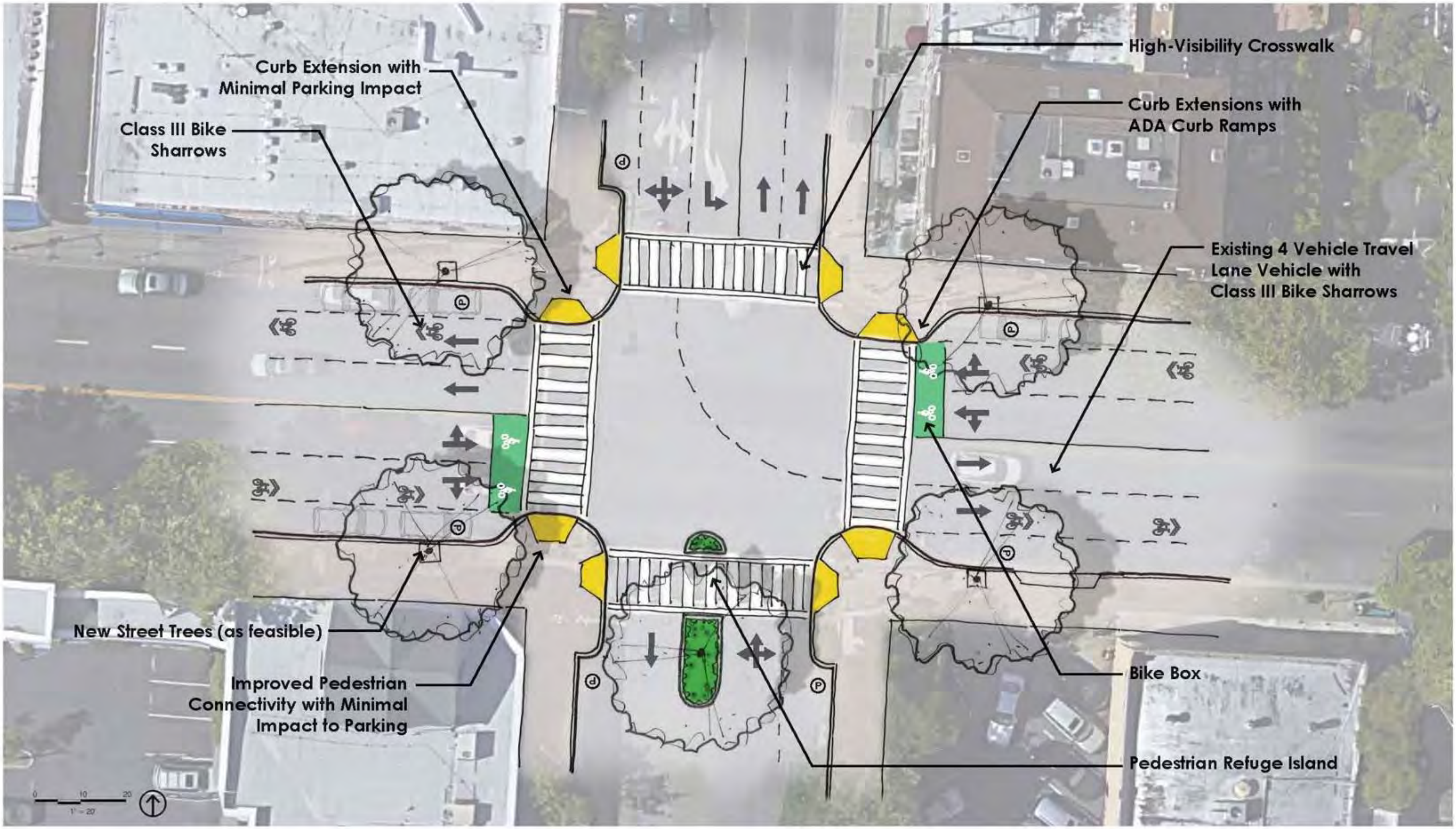
Recommended Safety Improvements

City Council | February 24, 2016

Webster Street – Two Lane Approaches and No Parking Loss



Webster Street – Existing Conditions

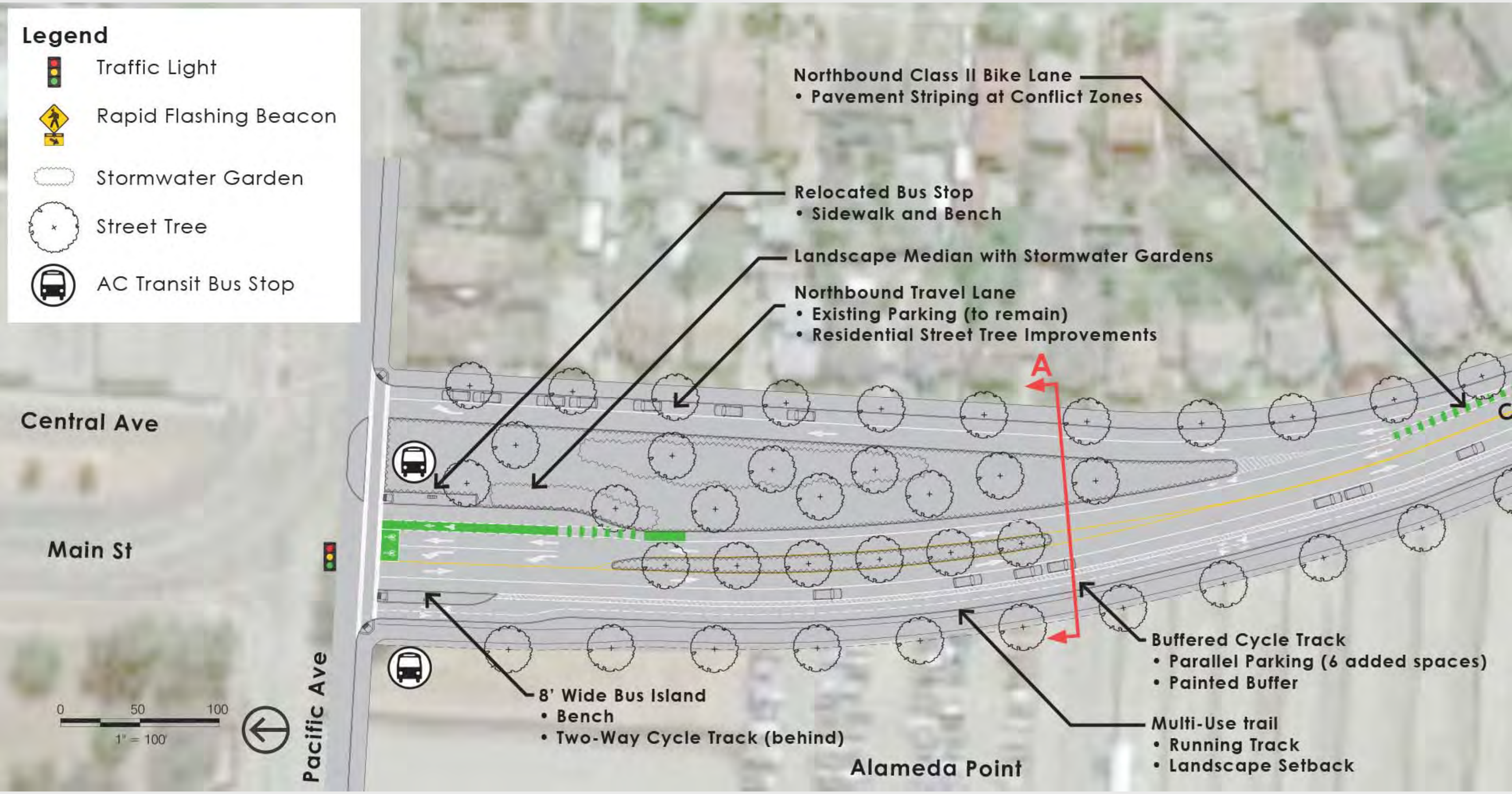


PLACEWORKS

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

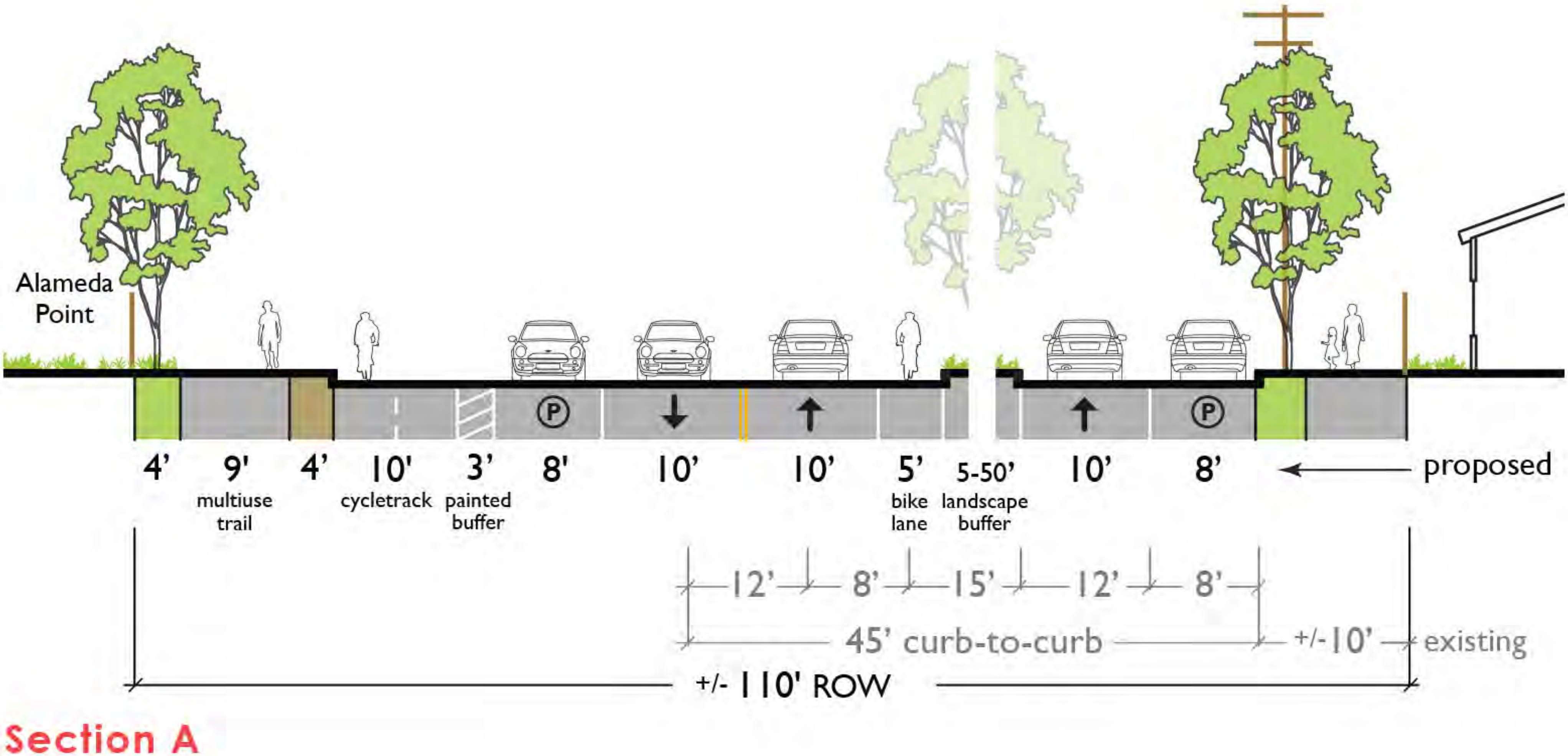
Webster Street and Central Avenue
Central Avenue Complete Street Concept Proposal
SEPTEMBER 2015

Concept Design: Pacific/Main/Central

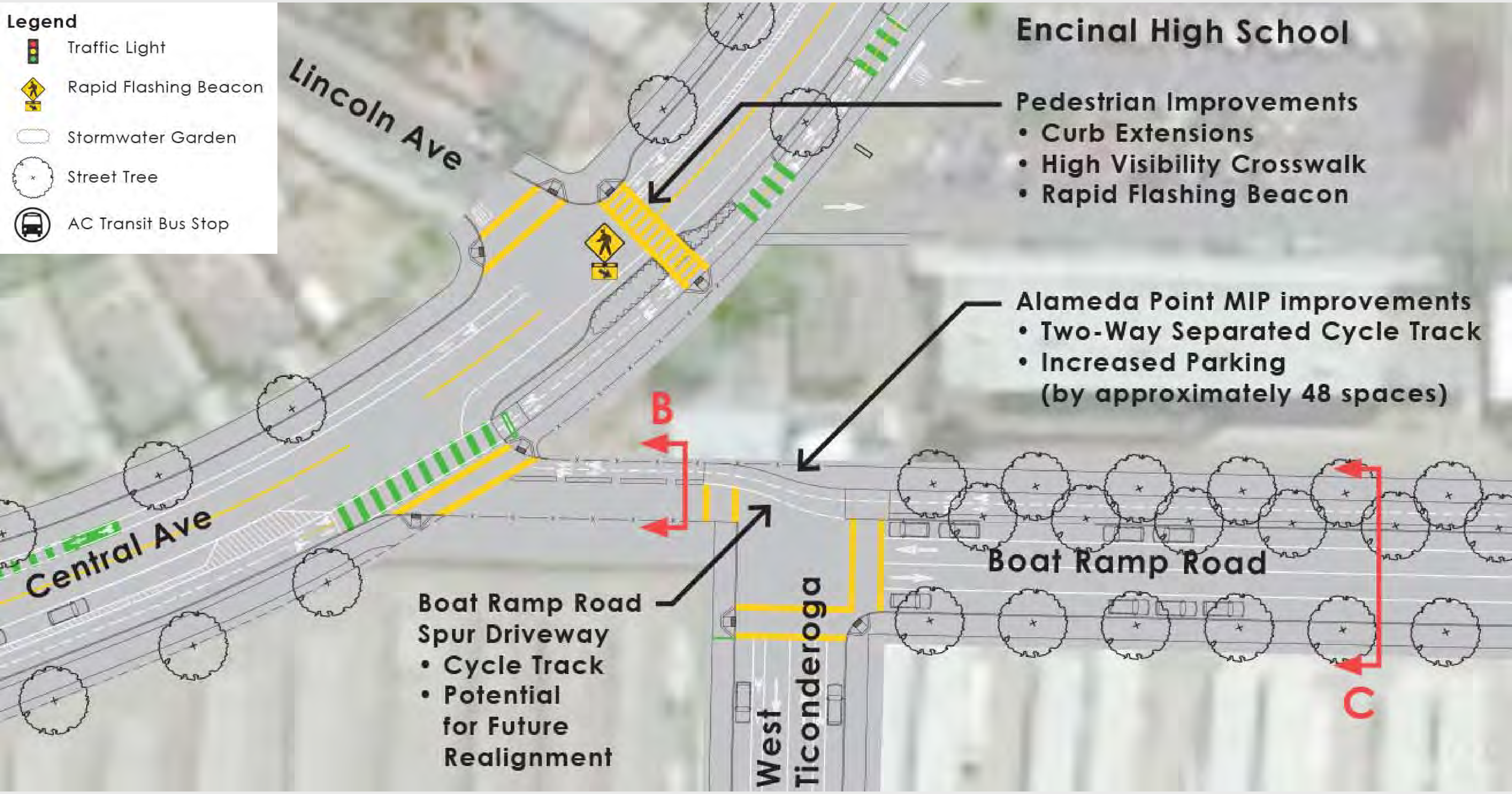


Central Avenue Proposed Street Concept

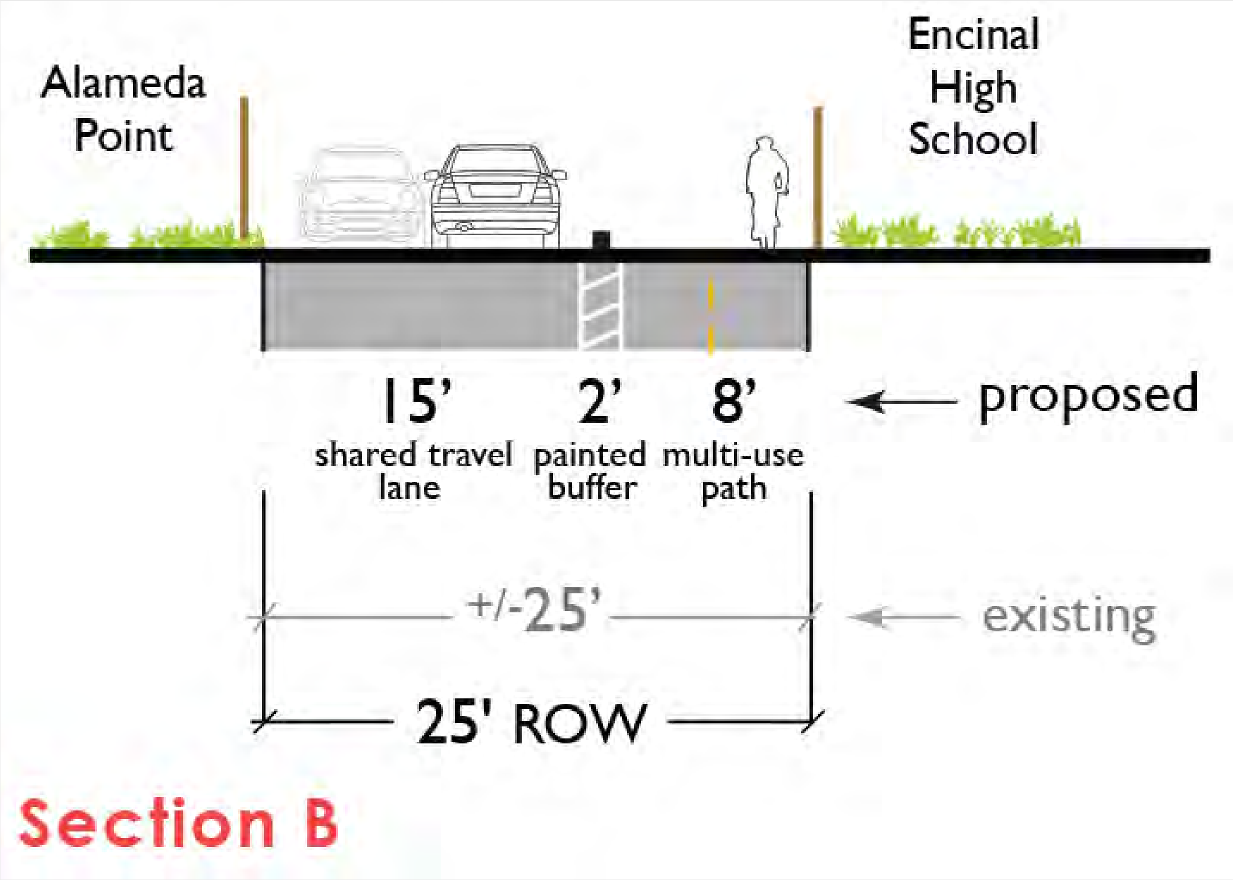
Concept Design: Pacific/Main/Central



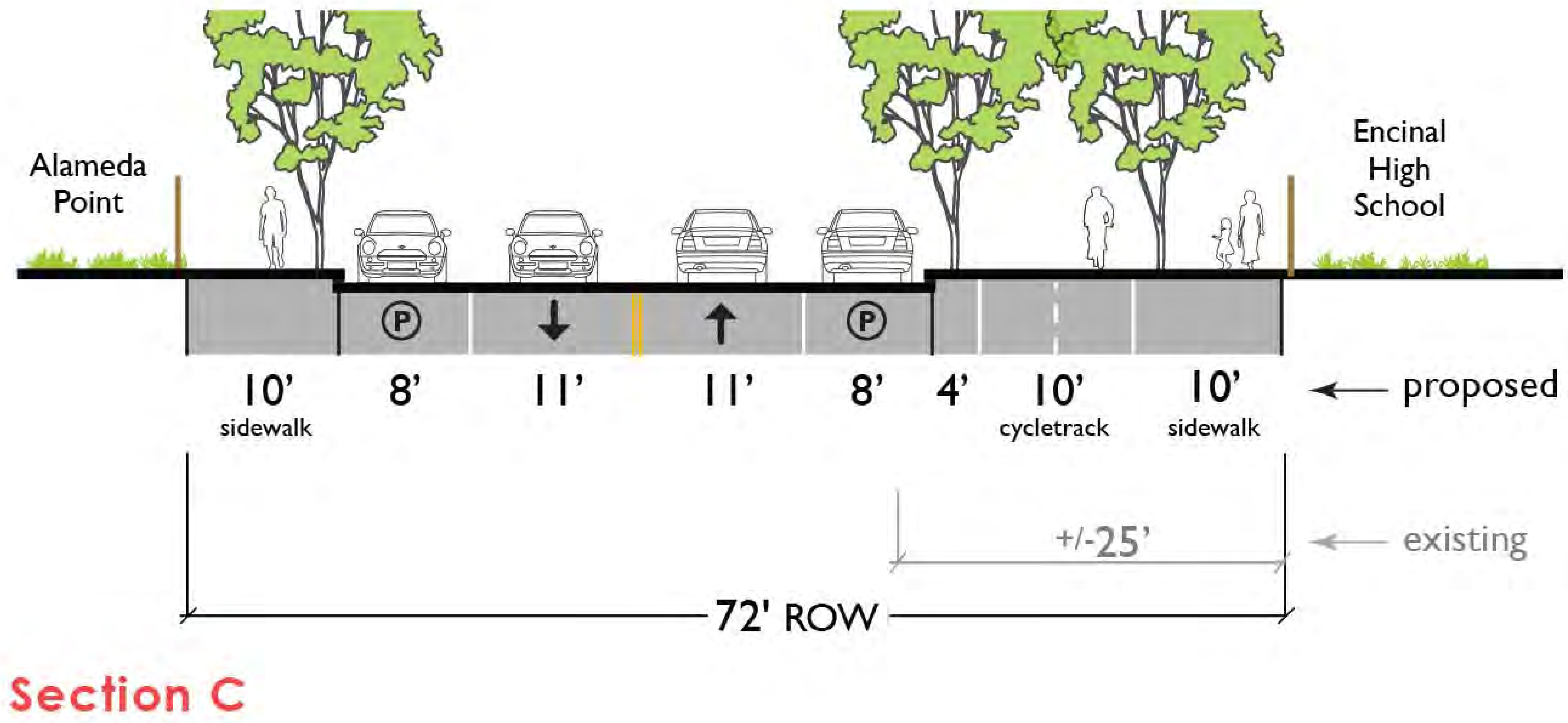
Concept Design: Lincoln/Boat Ramp



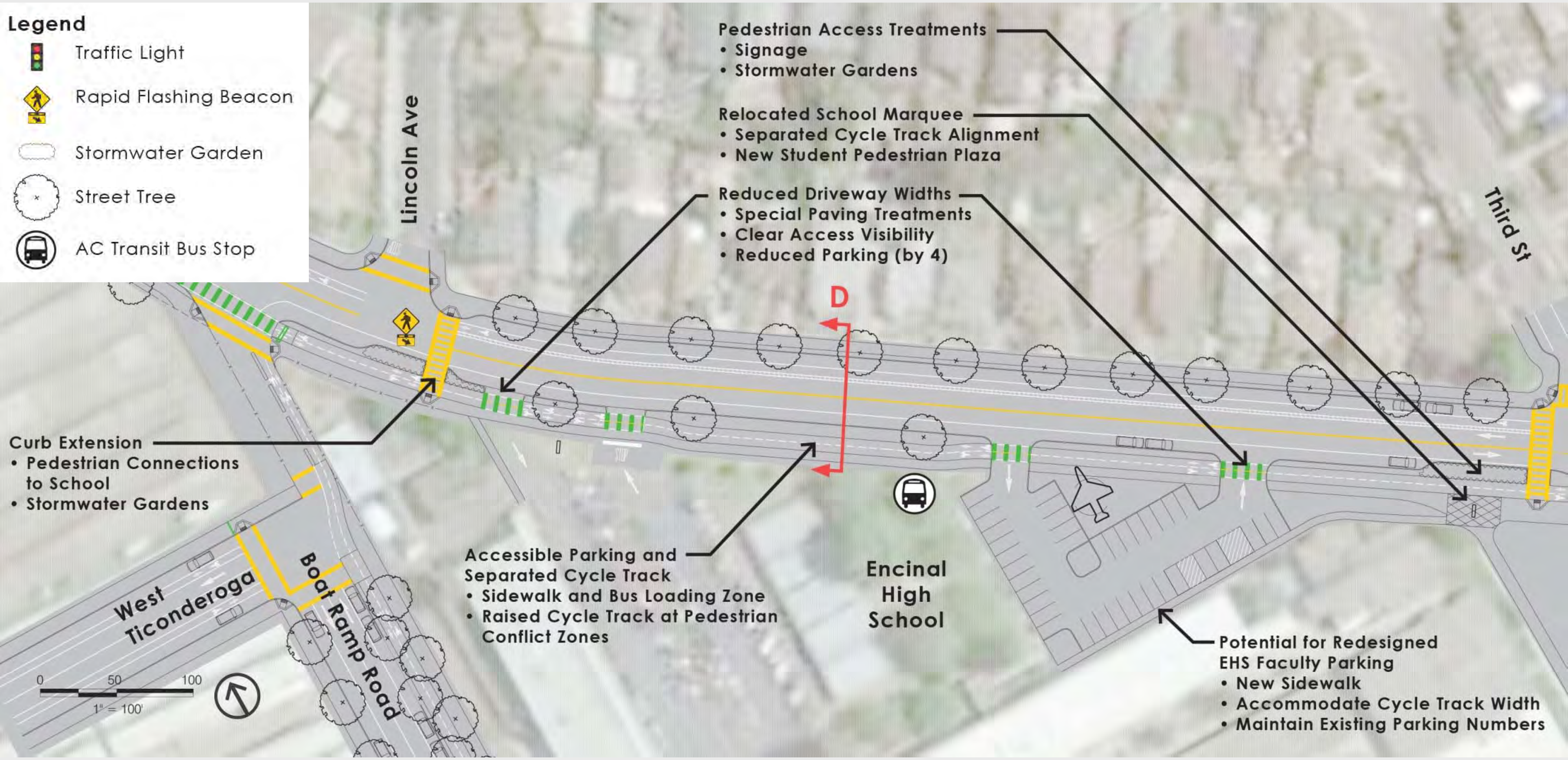
Concept Design: Boat Ramp Road



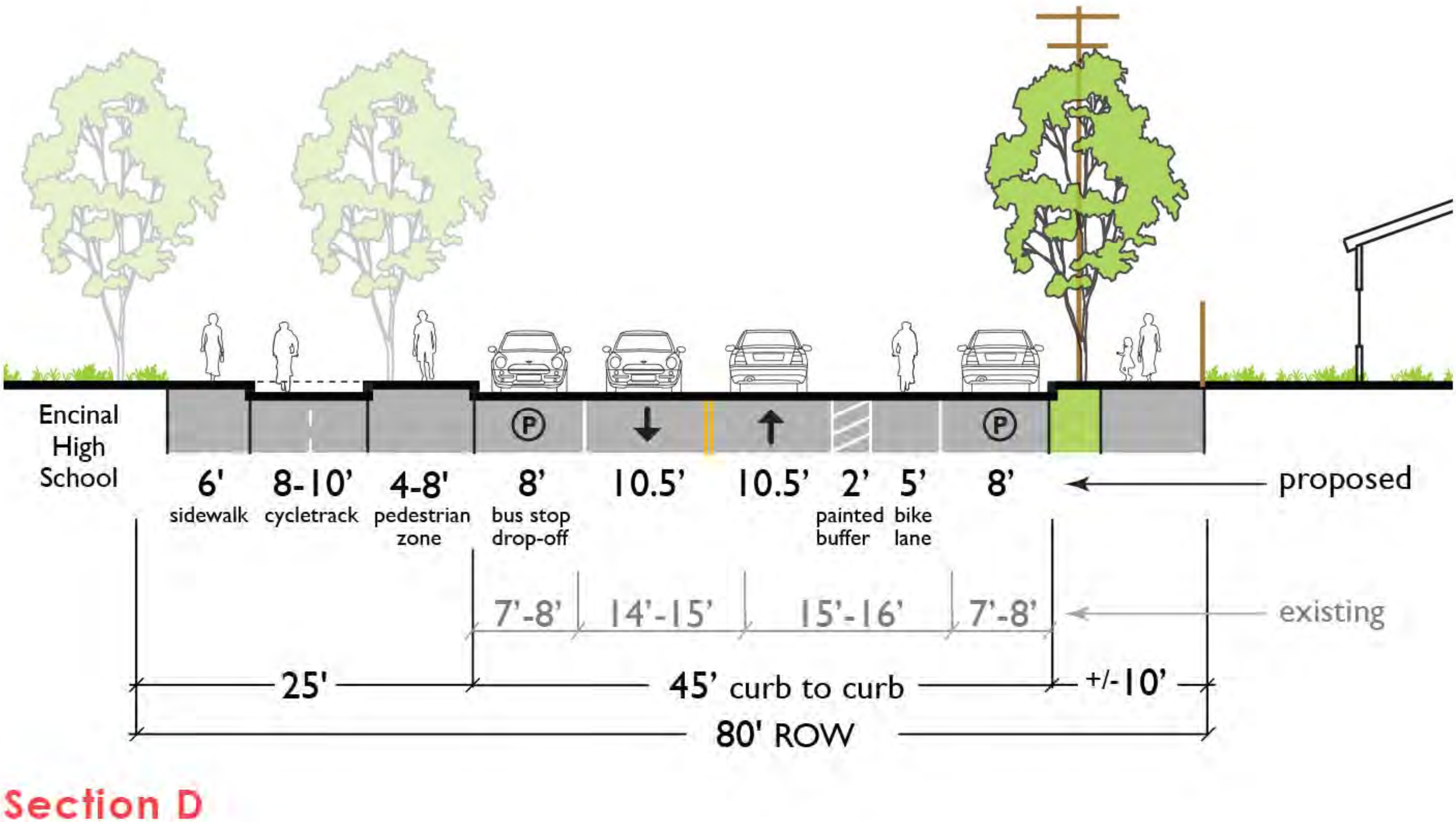
Concept Design: Boat Ramp Road



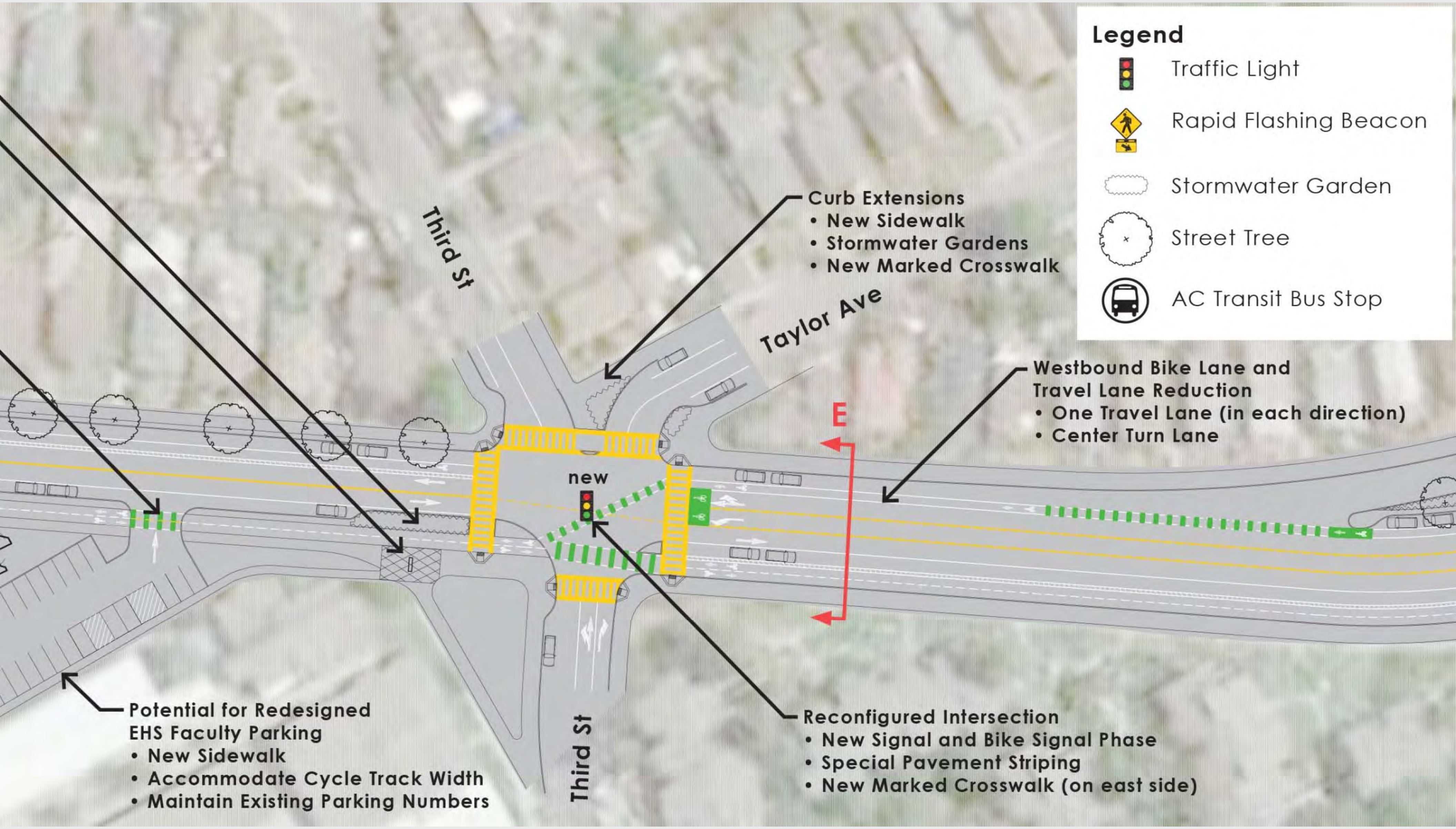
Concept Design: Encinal High School



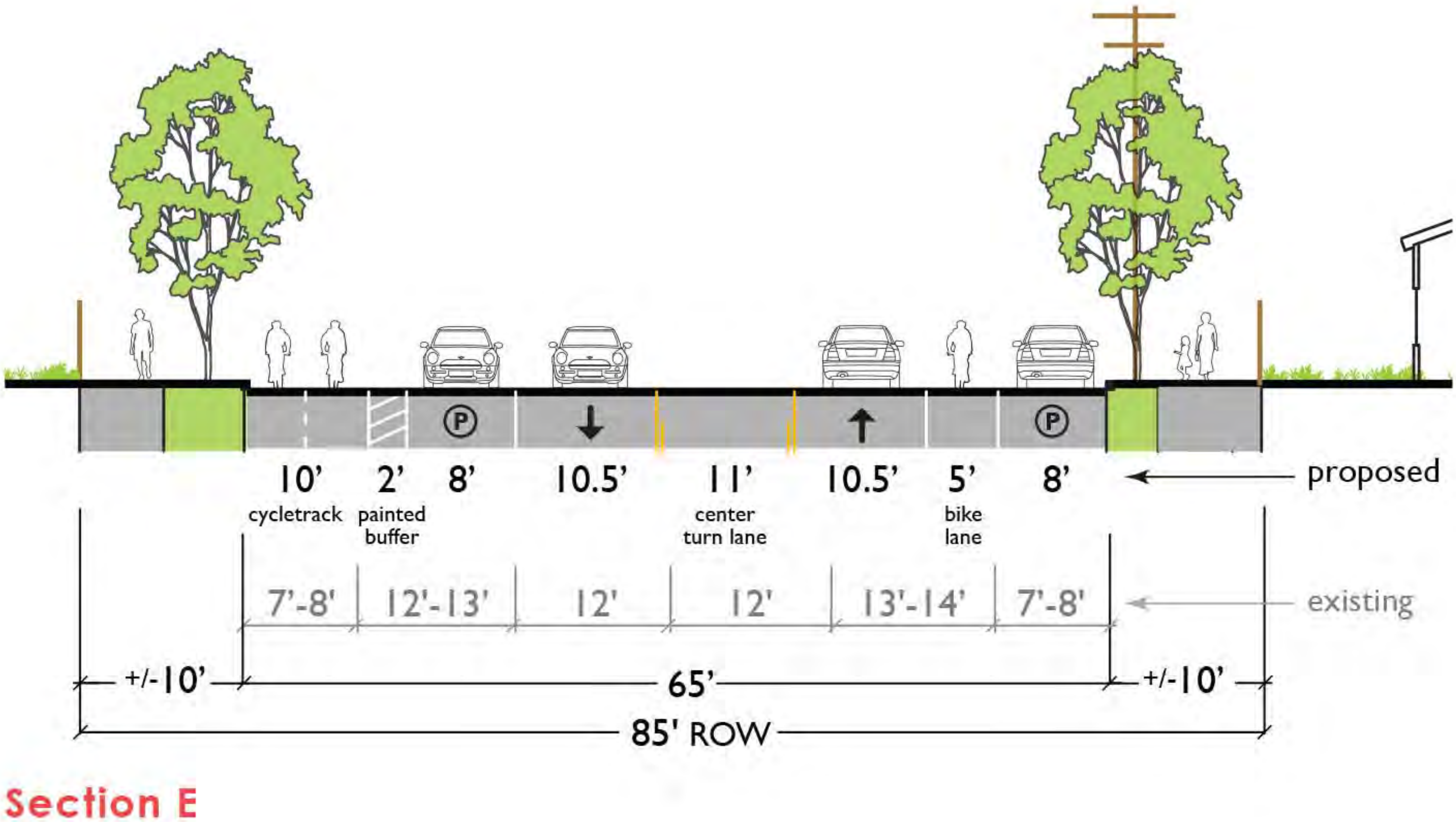
Concept Design: Encinal High School



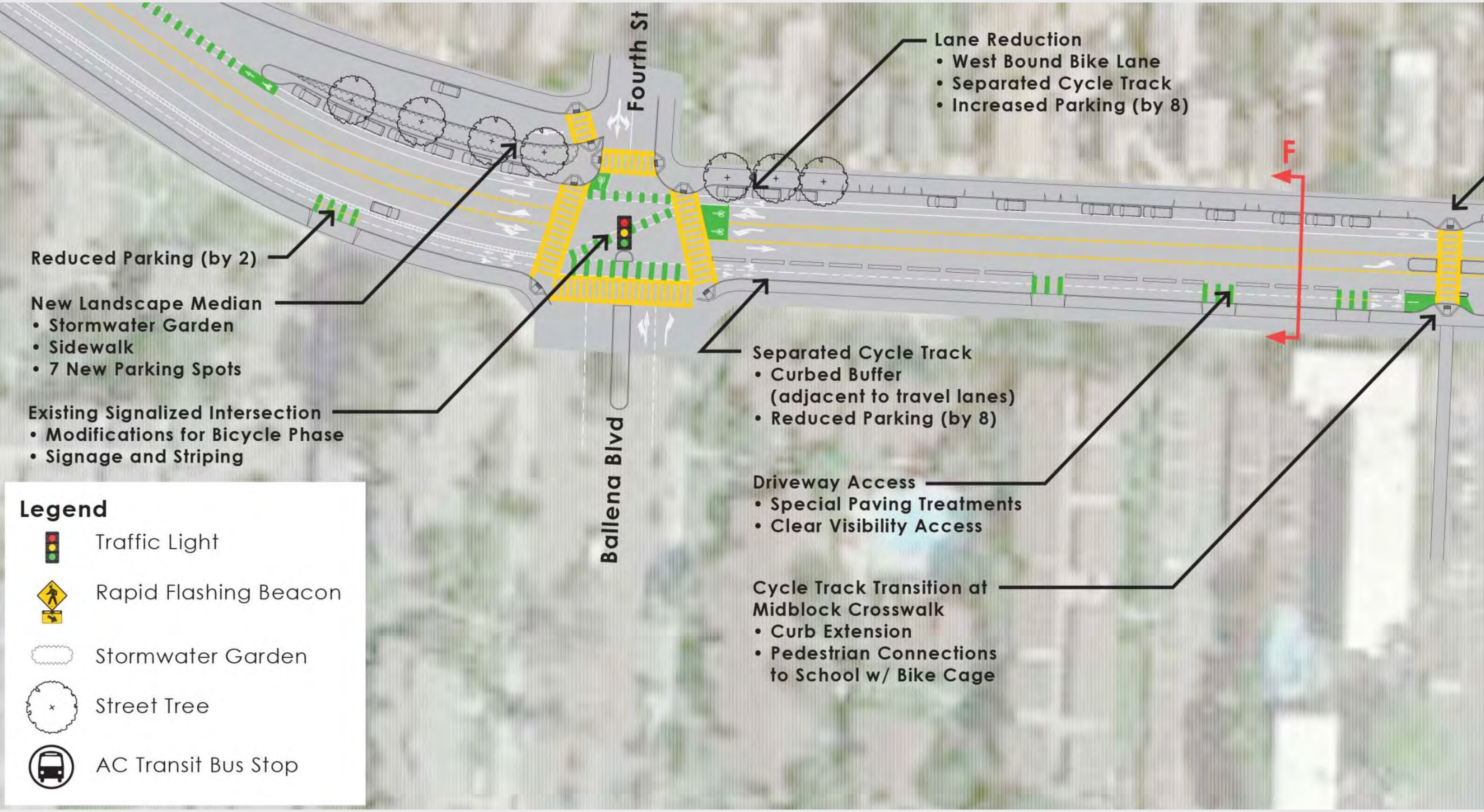
Concept Design: Third/Taylor/Central



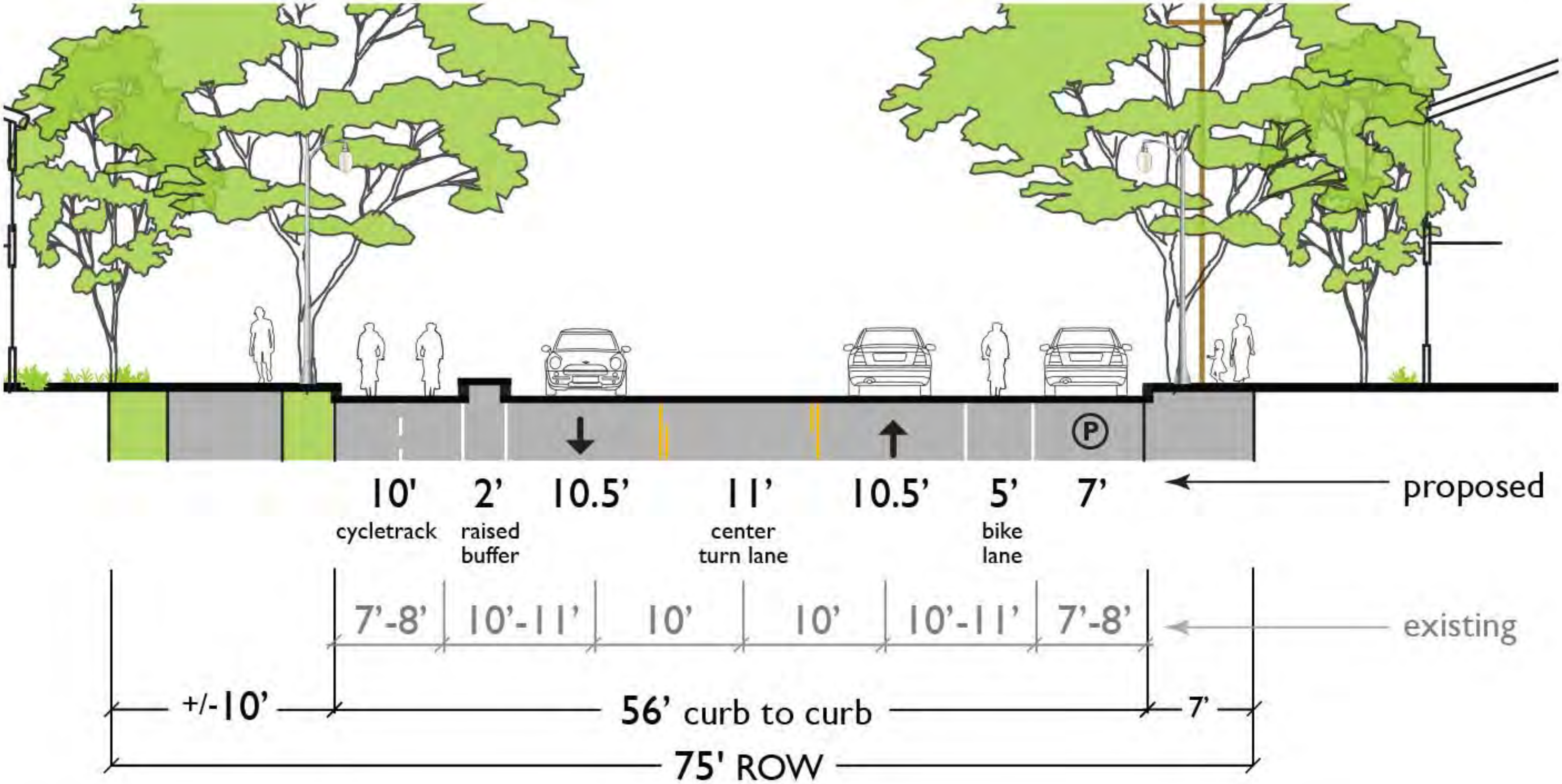
Concept Design: East of Third/Taylor



Concept Design: Fourth/Ballena/Central

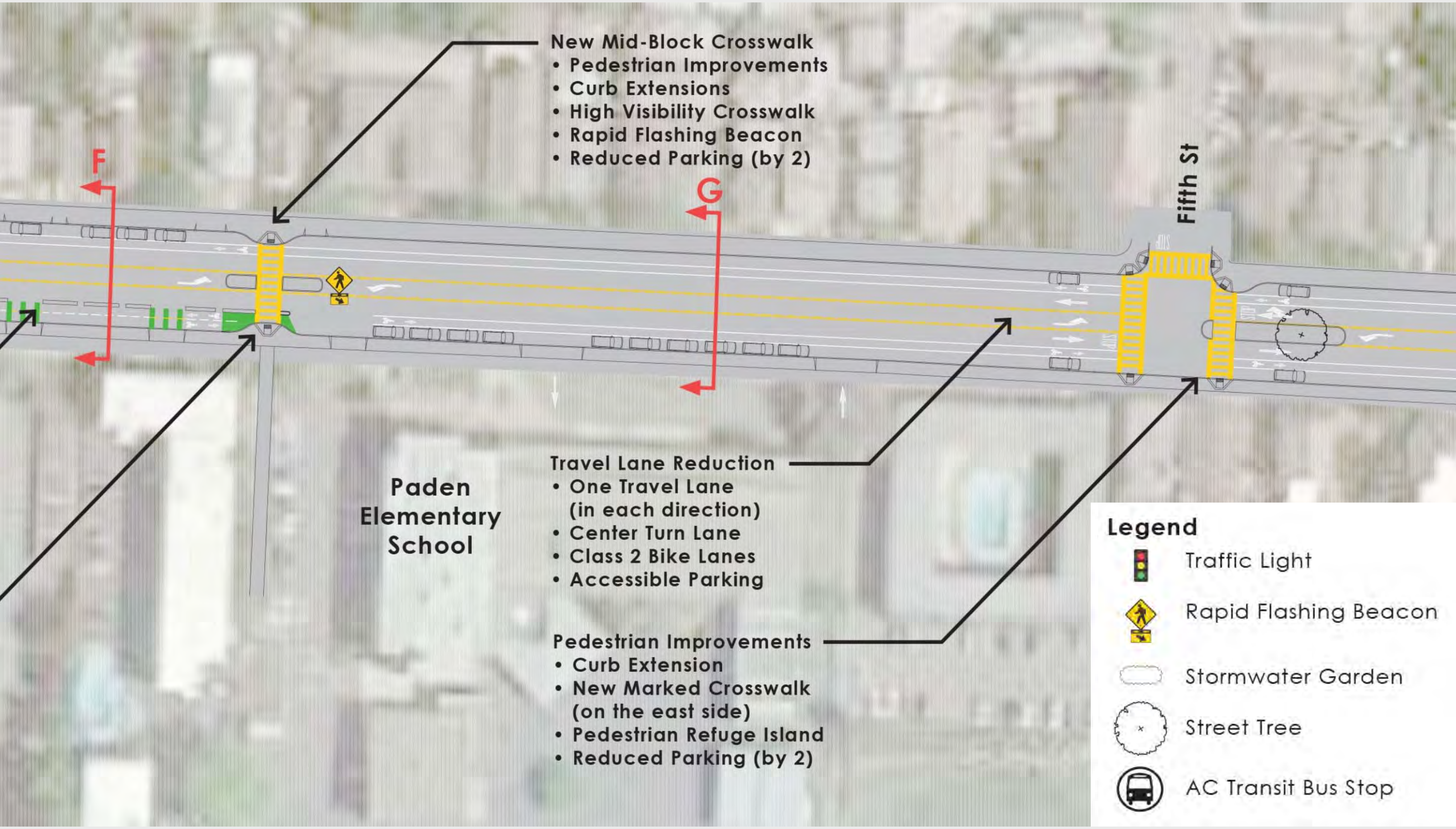


Concept Design: West of Paden

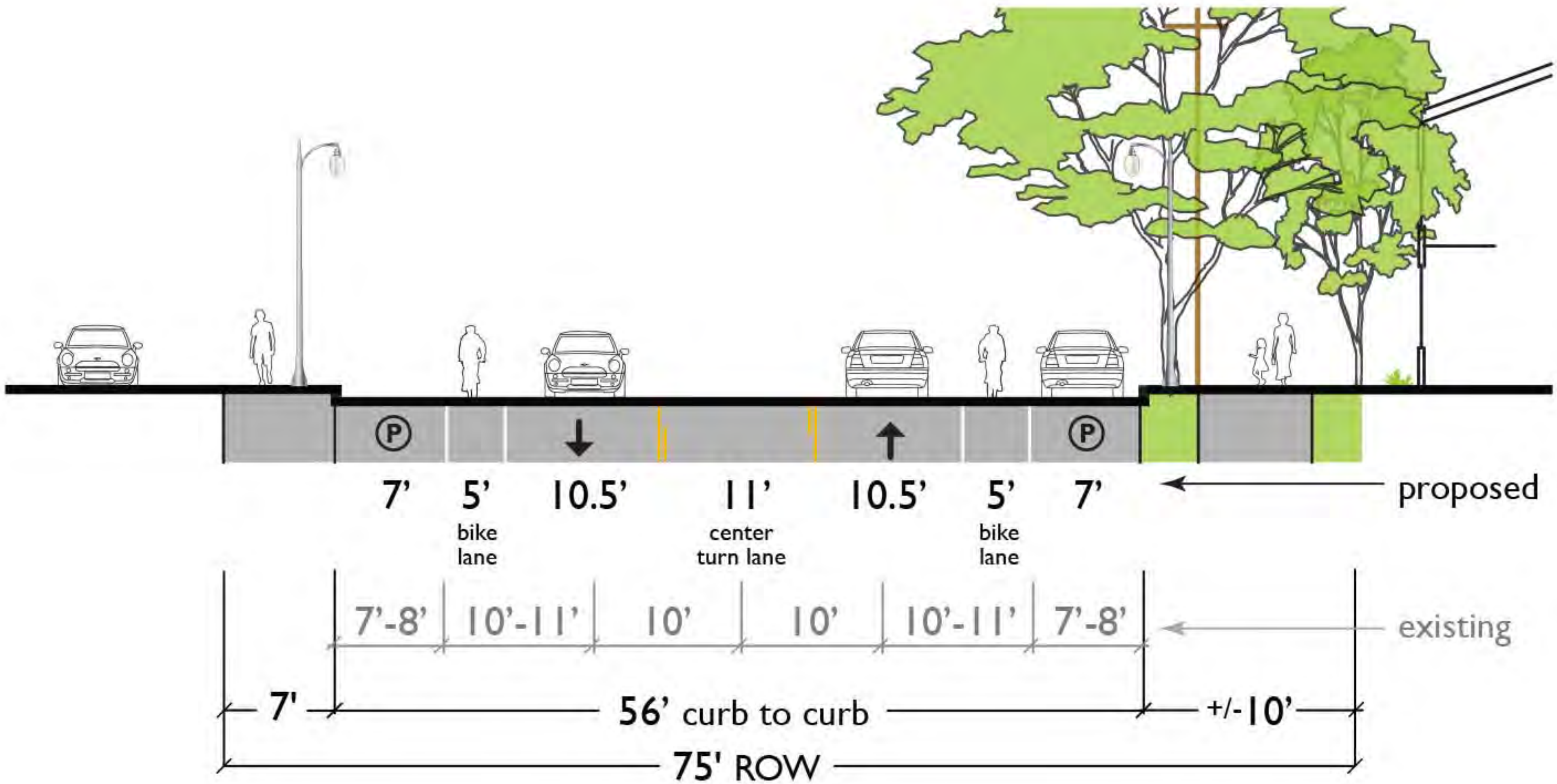


Section F

Concept Design: Paden Elementary

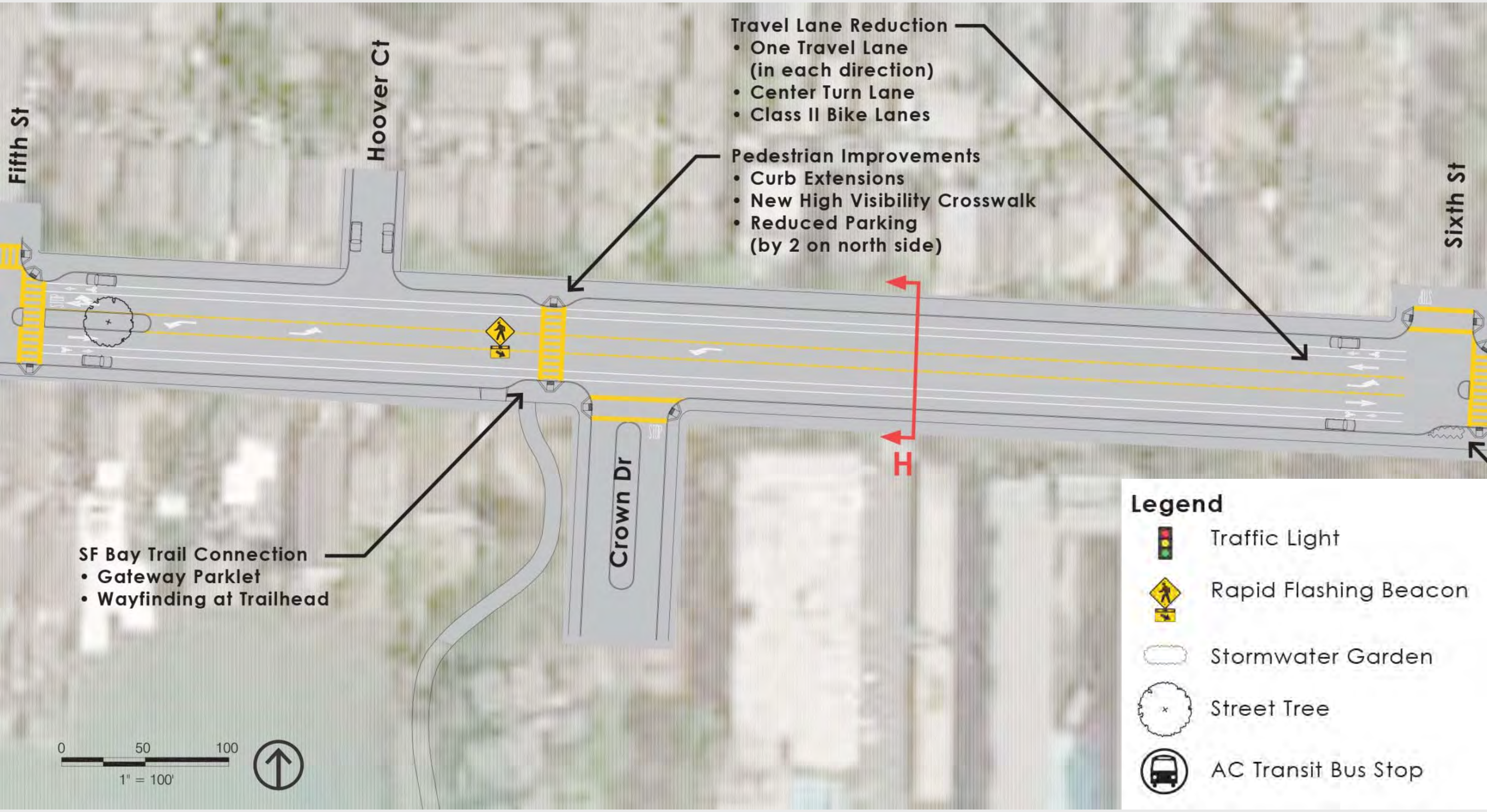


Concept Design: East of Paden

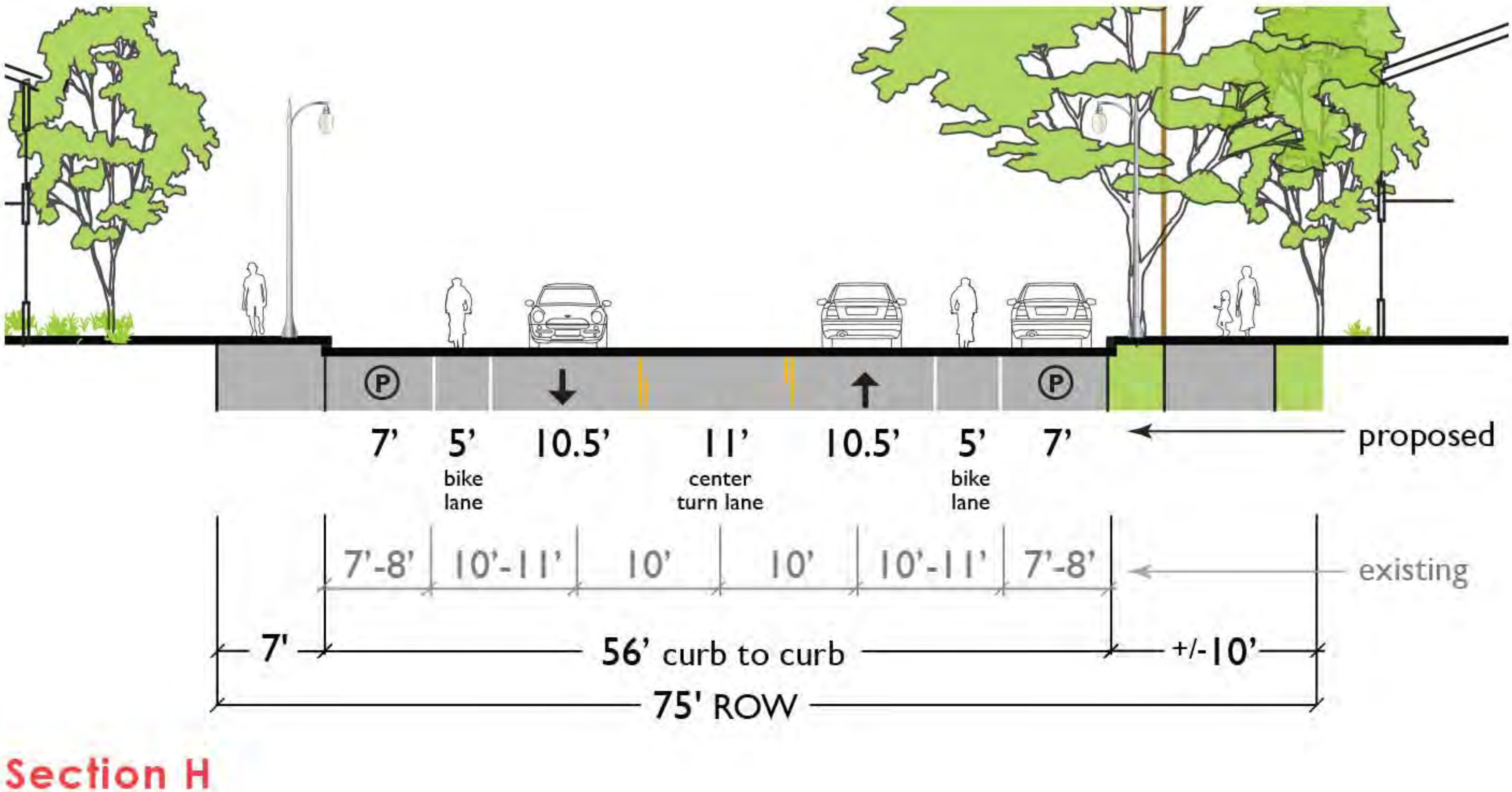


Section G

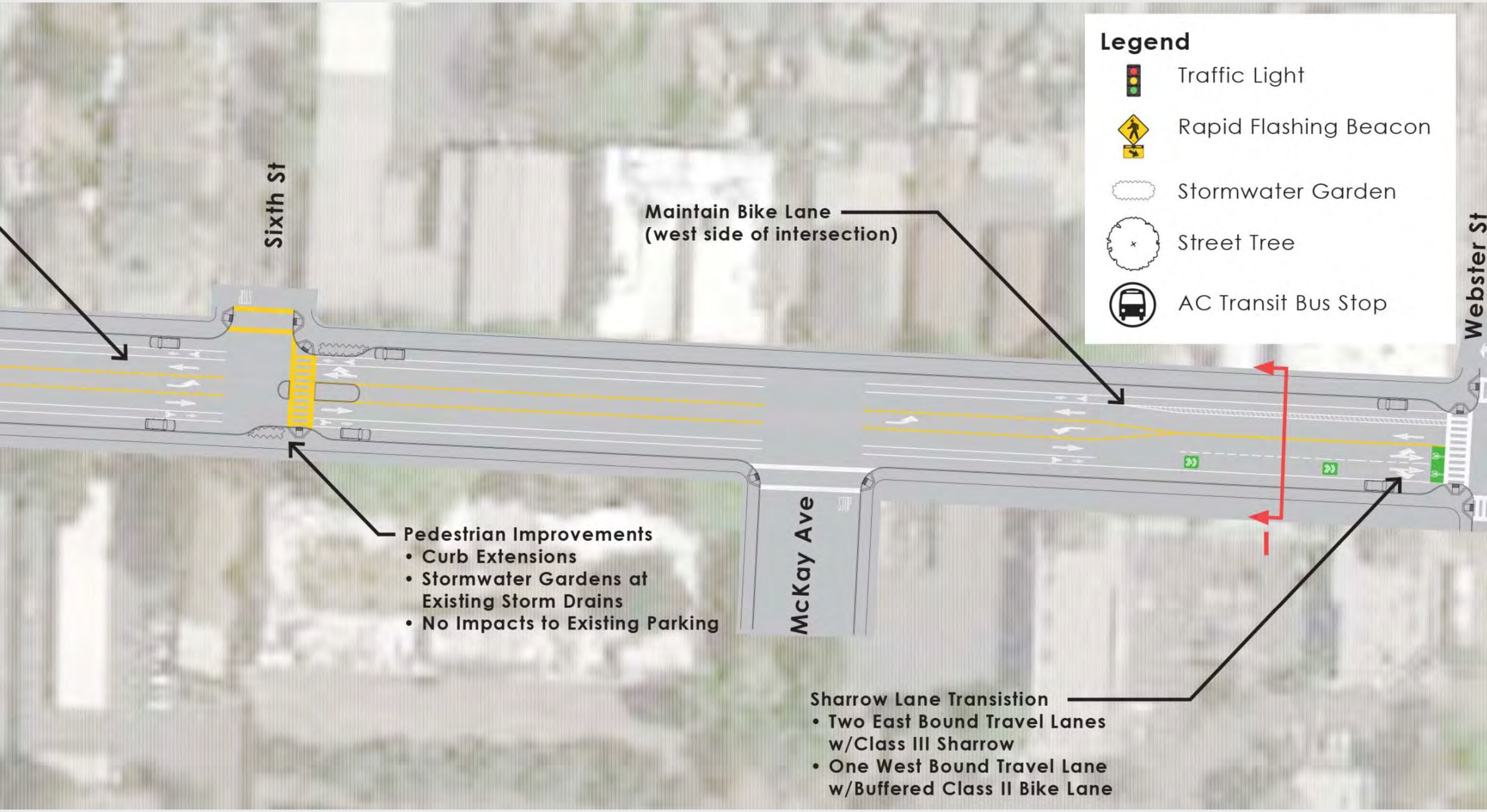
Concept Design: Fifth to Sixth



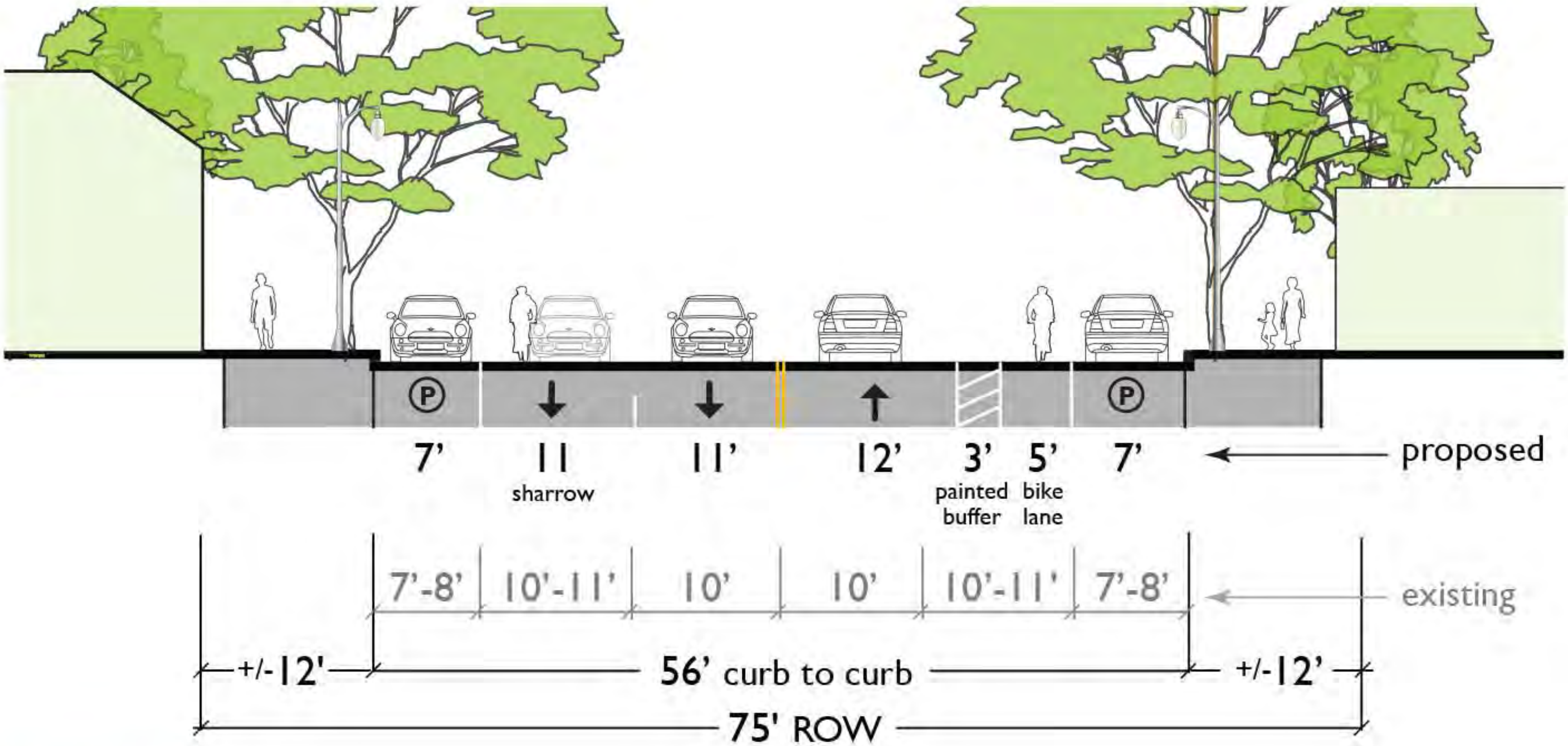
Concept Design: Fifth to Sixth



Concept Design: Sixth to Webster

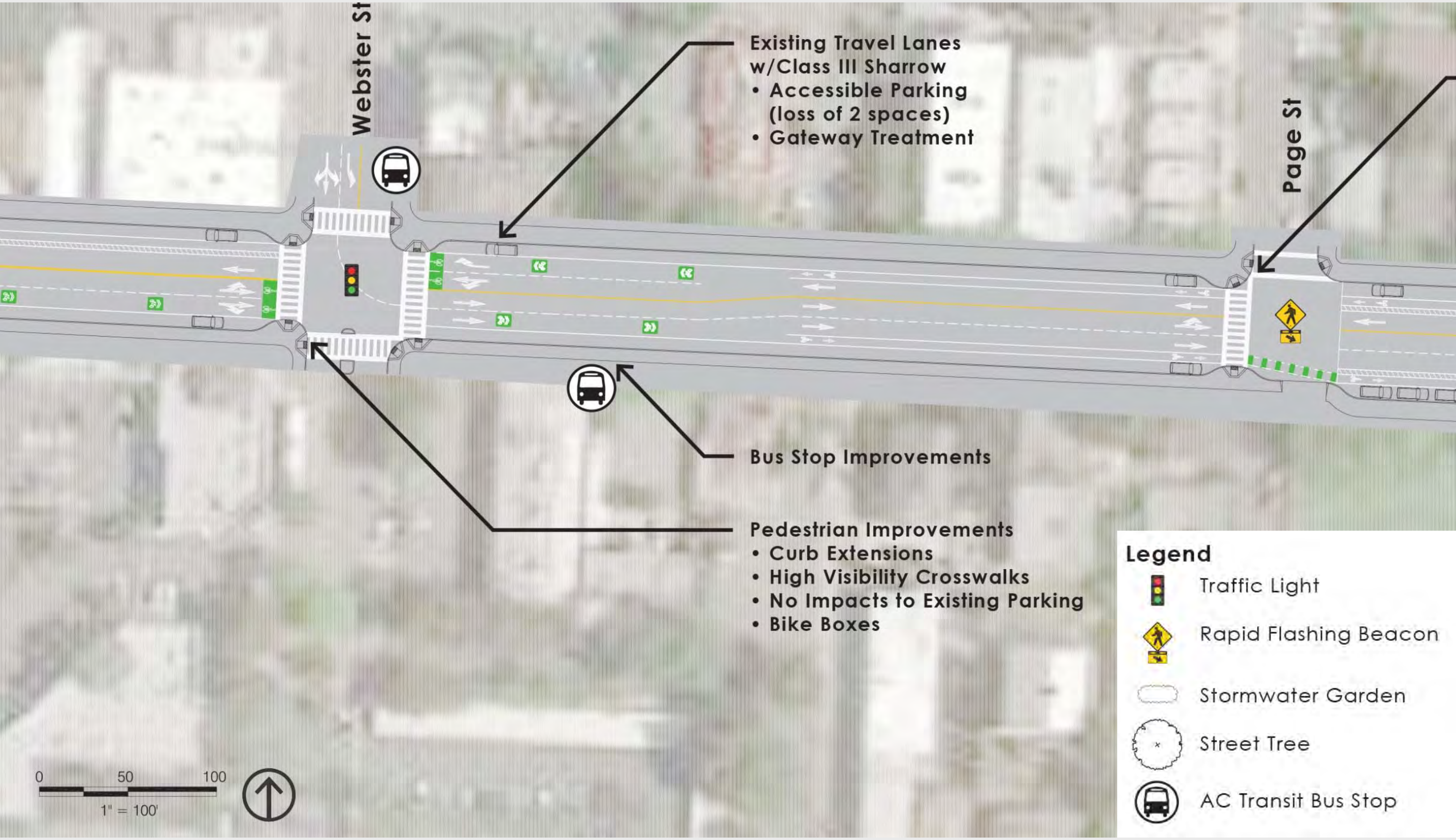


Concept Design: Sixth to Webster

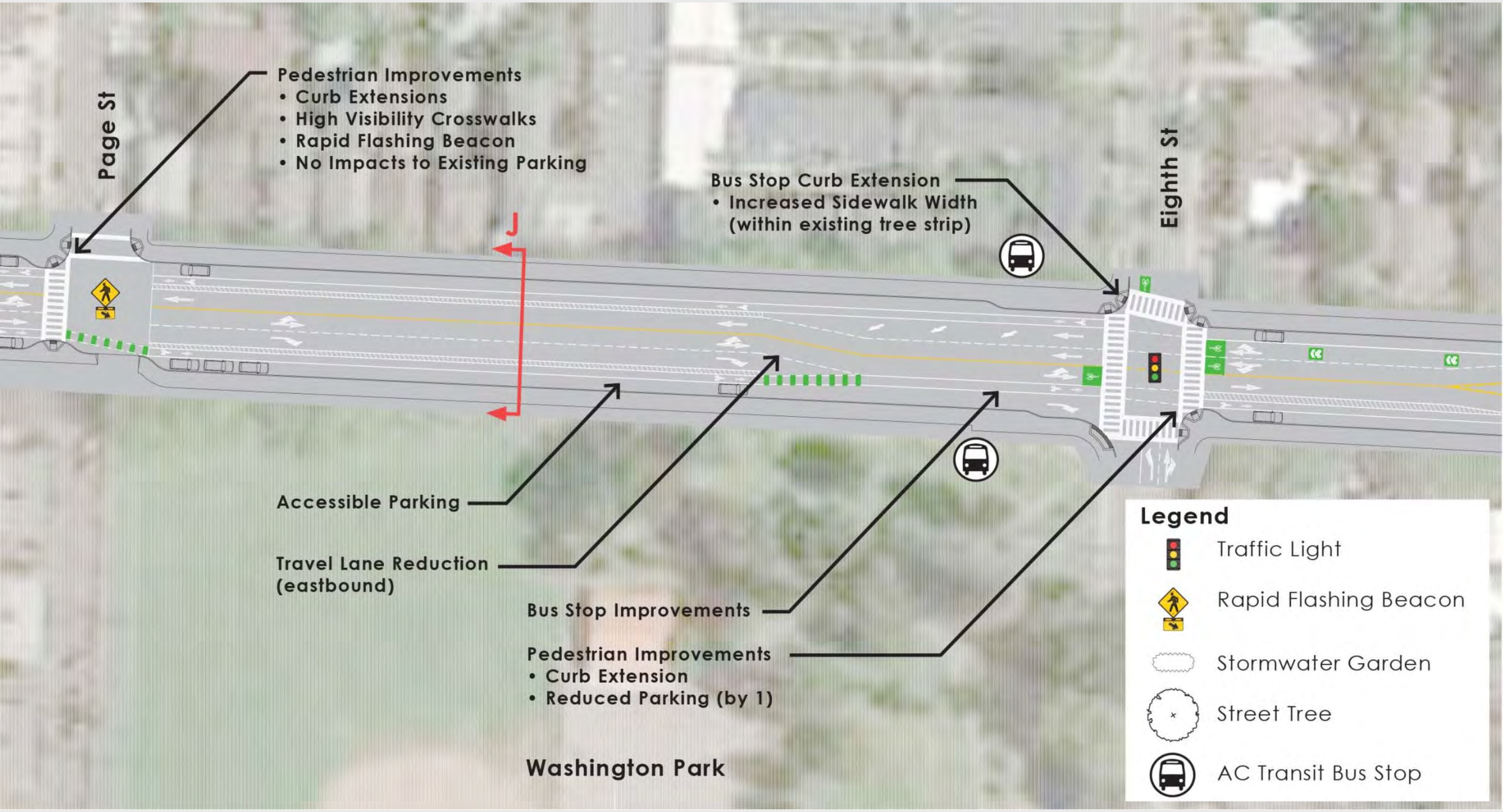


Section I

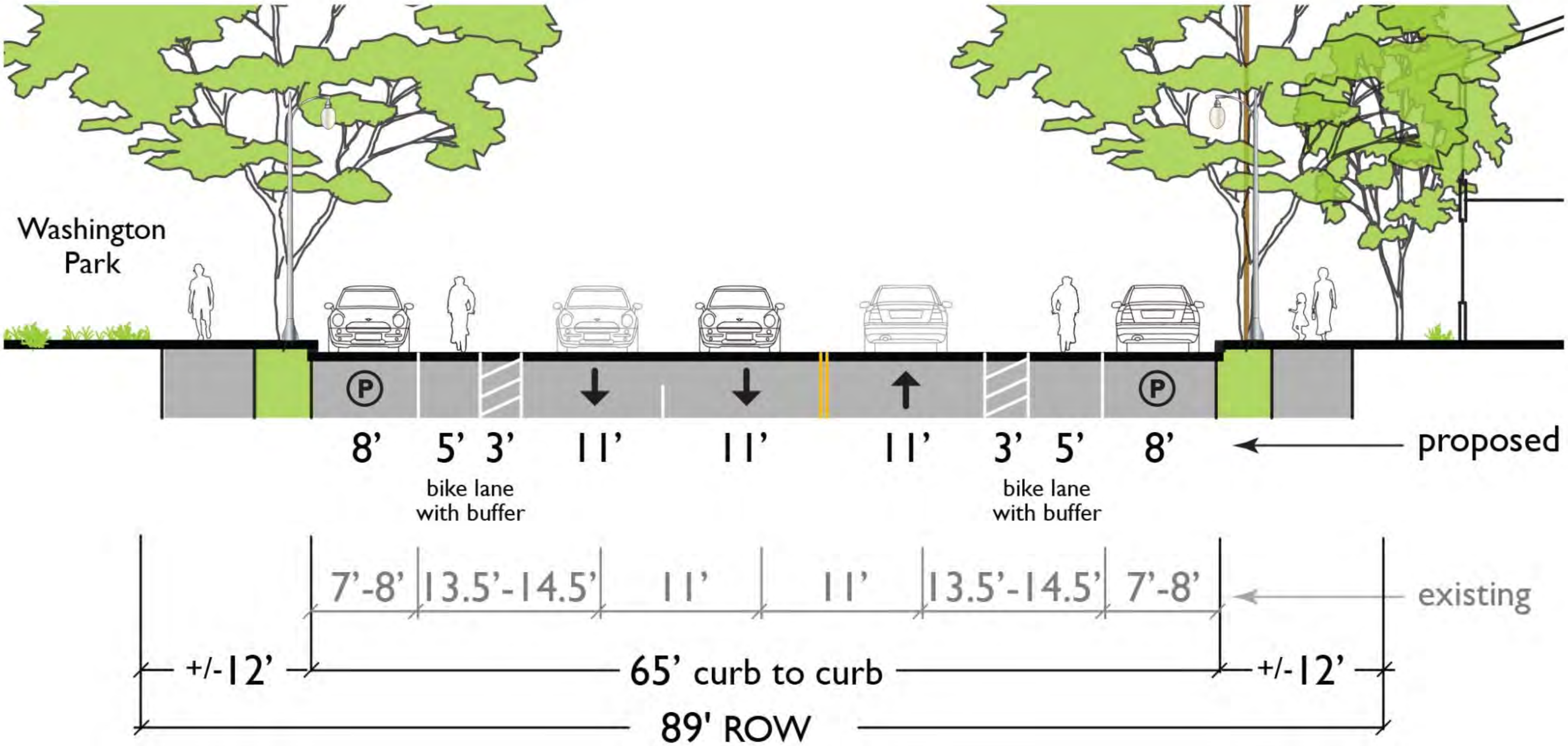
Concept Design: Webster to Page



Concept Design: Page to Eighth

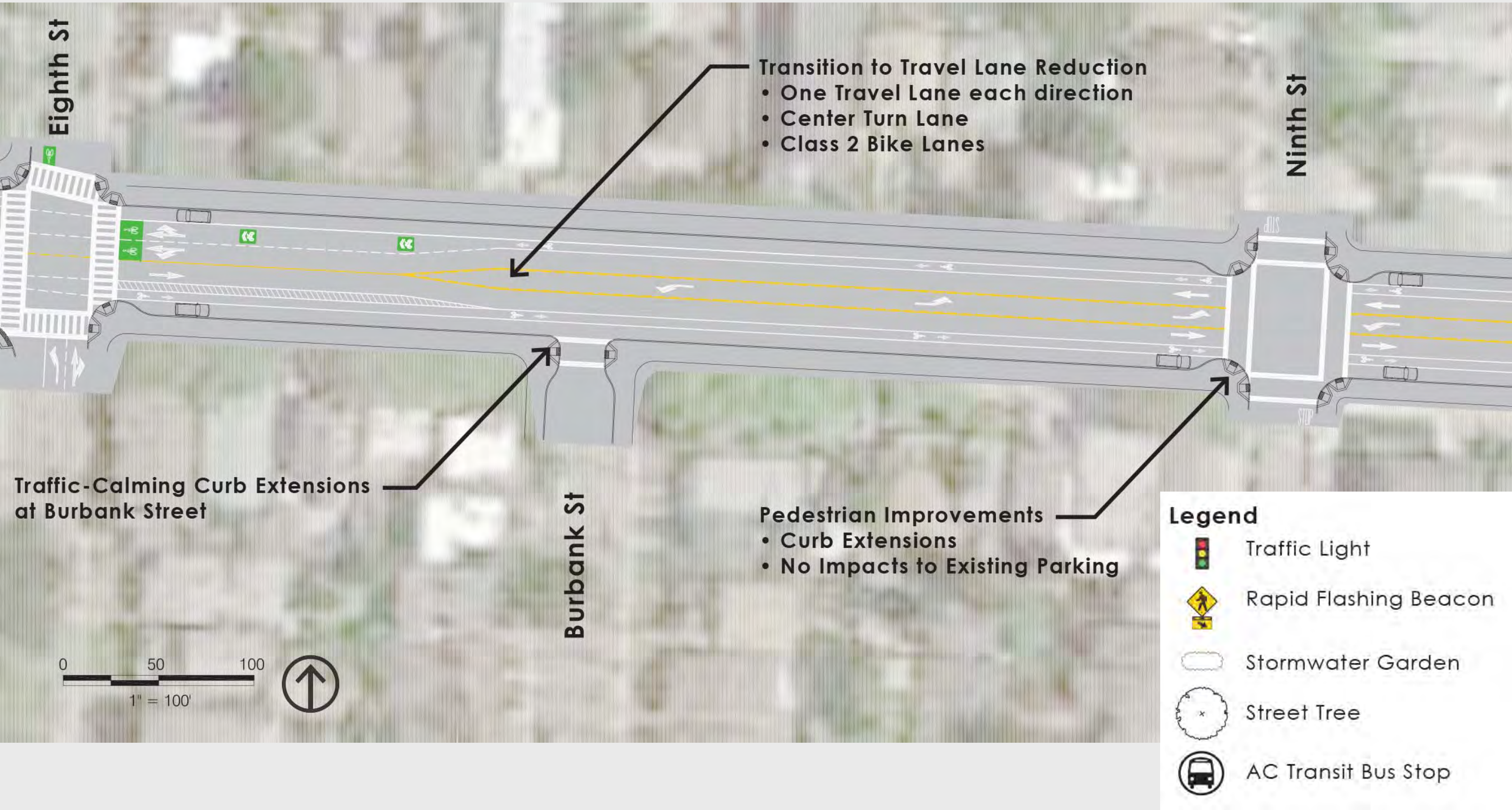


Concept Design: Page to Eighth

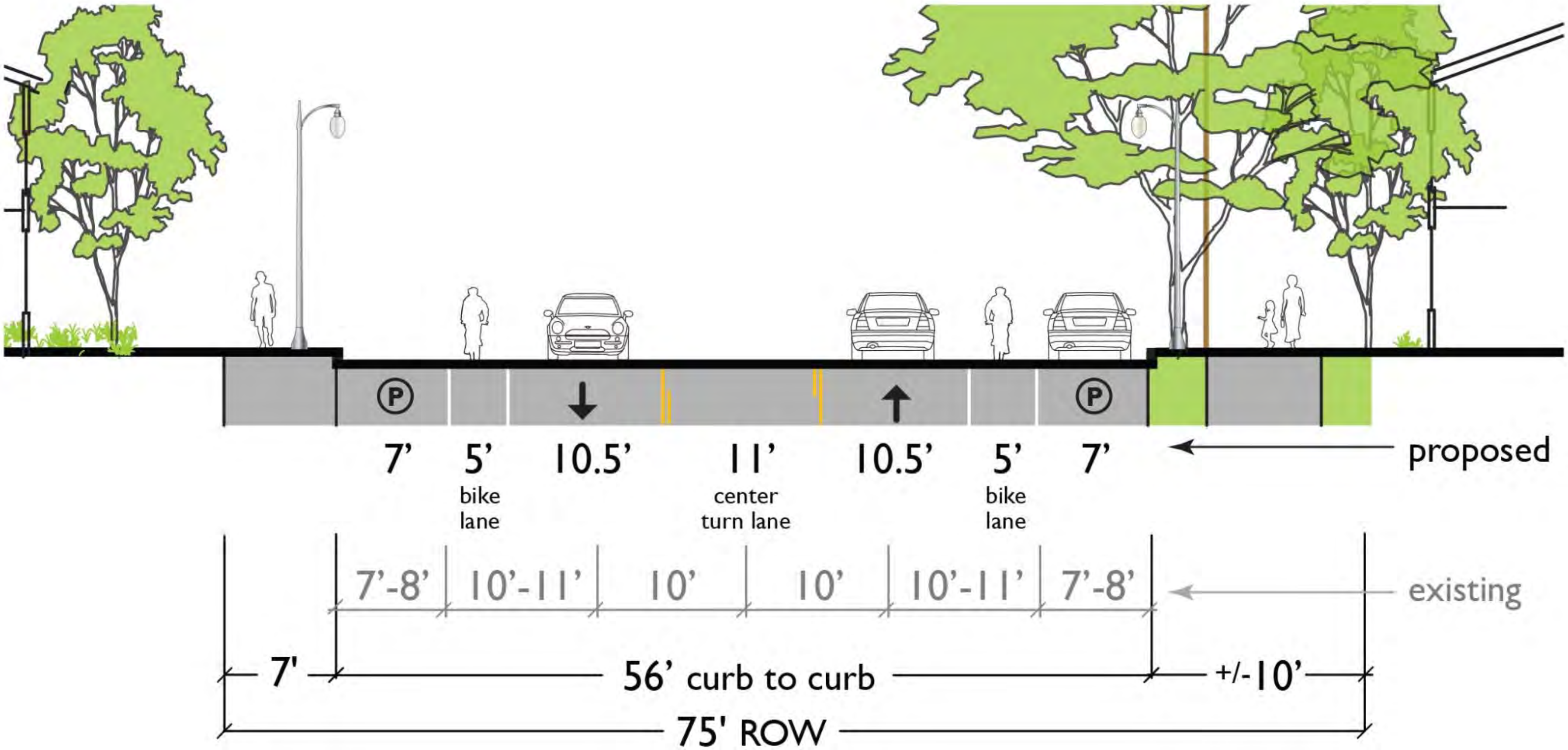


Section J

Concept Design: Eighth to Ninth

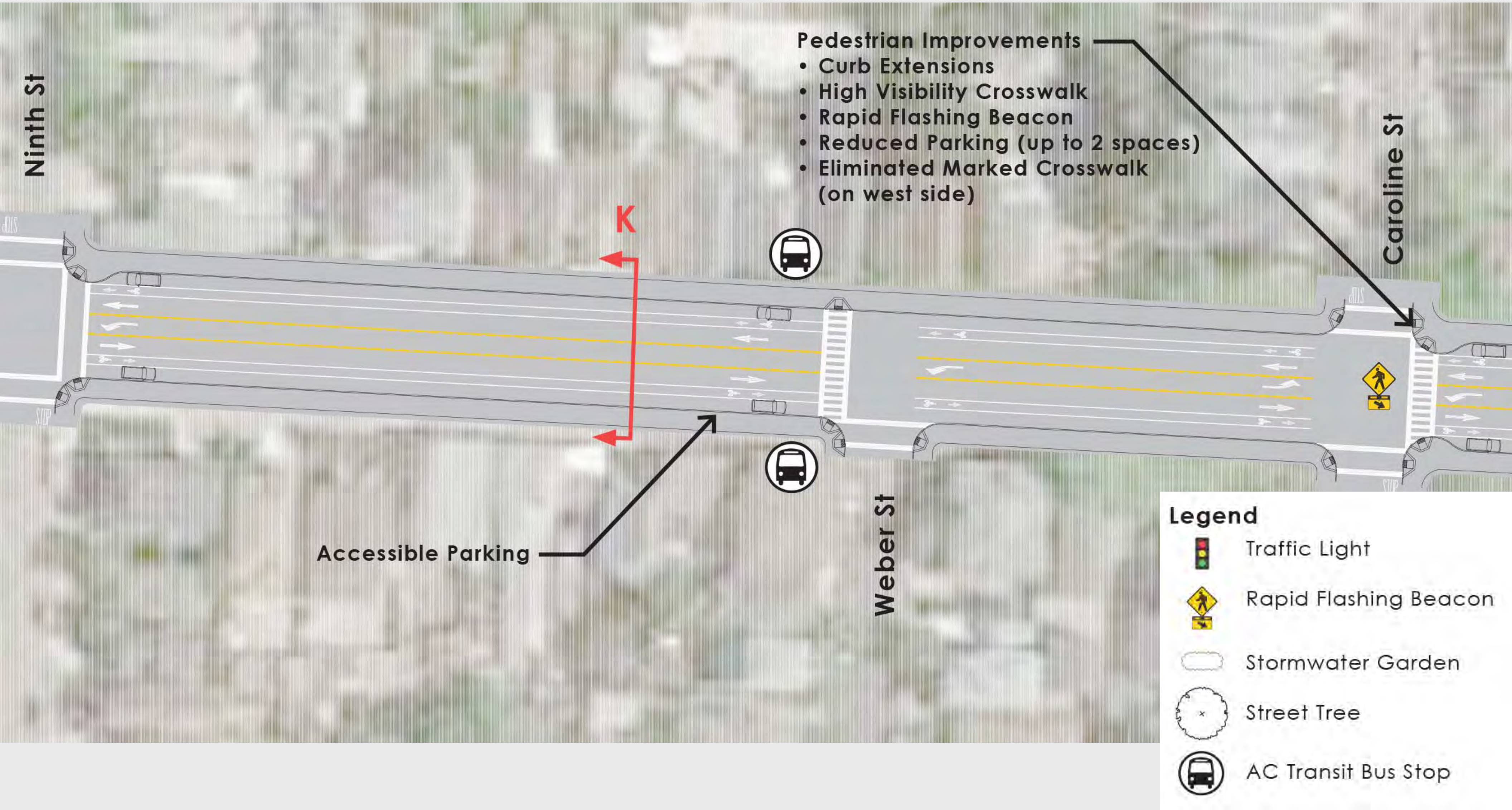


Concept Design: Eighth to Sherman

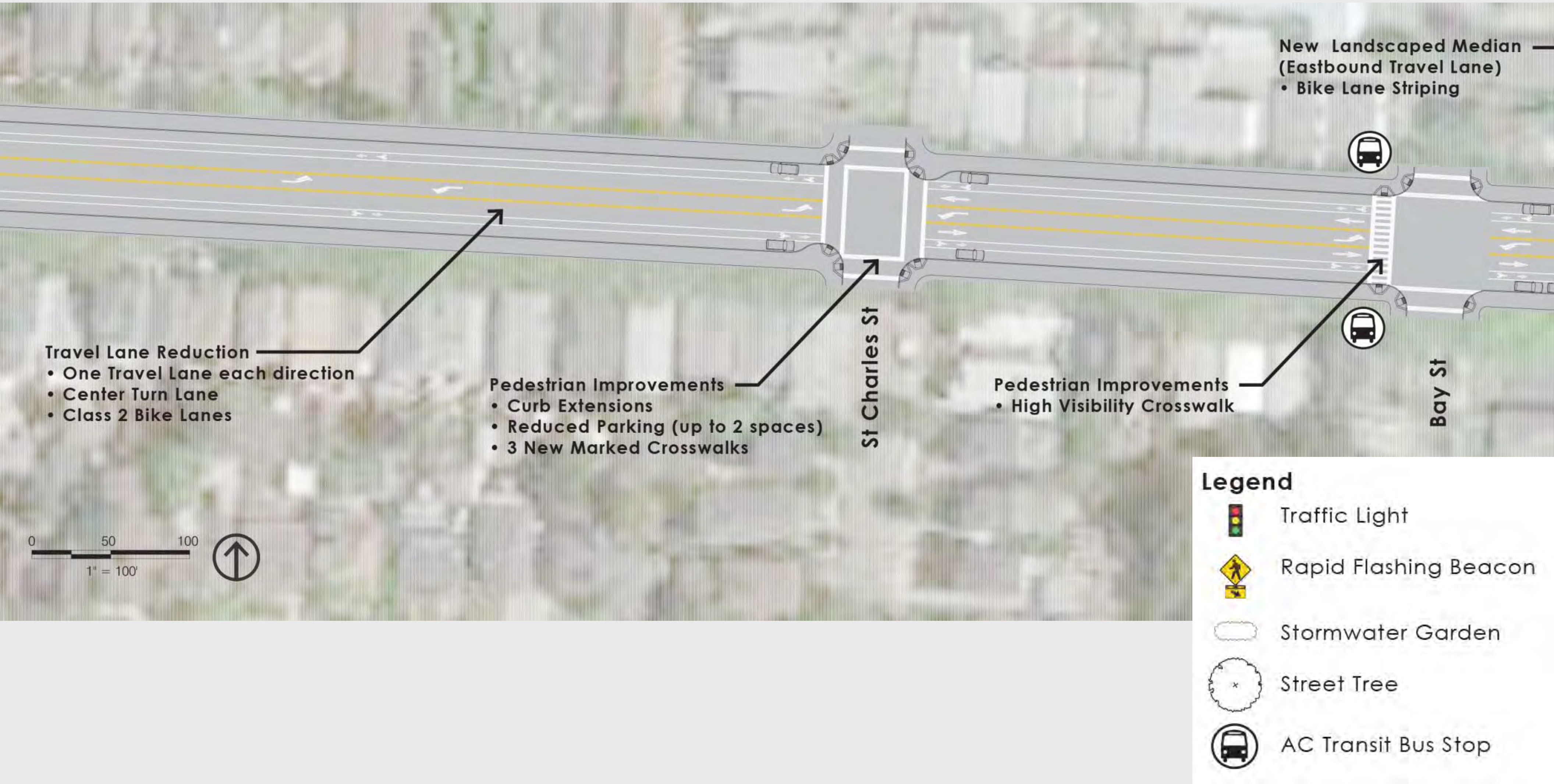


Section K (see next sheet)

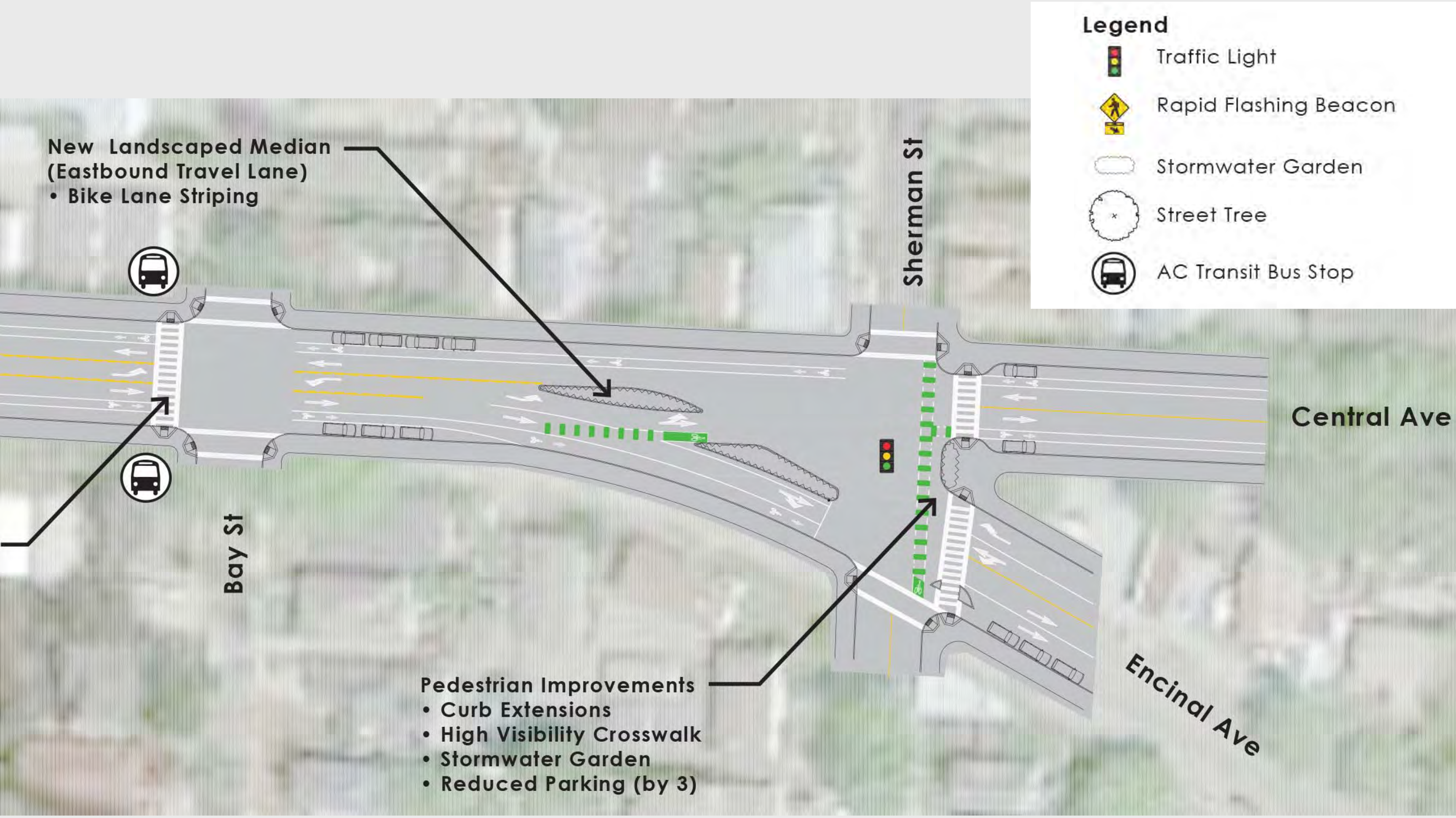
Concept Design: Ninth to Caroline



Concept Design: Caroline to Bay

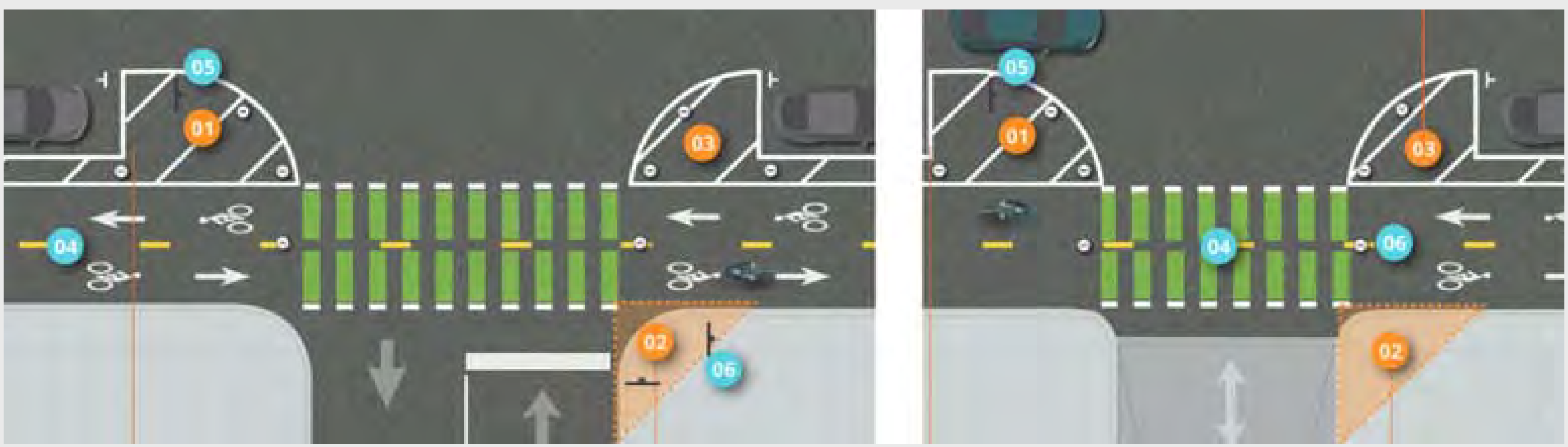


Concept Design: Sherman/Encinal



FHWA Guidelines

- **TWO-WAY SEPARATED BIKE LANE (CYCLETRACK)**
  - Prohibit parking within 20’ from edge of driveway, and landscape/street-side elements within 15’
  - Skip Striping at Conflict Areas
  - Signs: “DO NOT ENTER” with “EXCEPT BICYCLES”, or “BIKE LANE” (and/or use a delineator post on the centerline)



FHWA Guidelines

- **MIXING ZONE**: an area where bicyclists and right-turning automobiles merge into one travel lane approaching an intersection.
  - Shared Lane Markings (“Sharrows”)
  - Signs: “BEGIN RIGHT TURN LANE YIELD TO BIKES”



FHWA Guidelines

- **LATERAL SHIFT**: moves cyclists to the left of the motor vehicle right turn lane before vehicles can move right.
  - Skip Striping in Conflict Areas and Bike Boxes
  - Signs: “BEGIN RIGHT TURN LANE YIELD TO BIKES”



FHWA Guidelines

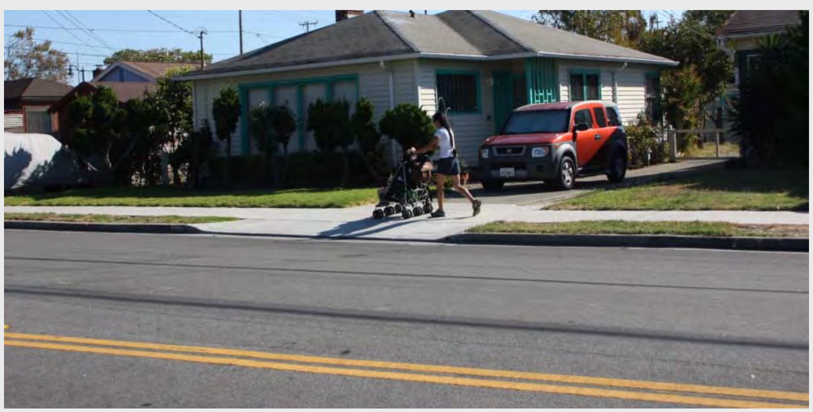
- **ACCESSIBLE PARKING**
  - 5’ wide minimum access aisle provided at street level, and 3’ wide front and/or rear aisles
  - Crosswalk and curb ramp connecting access aisle to sidewalk
  - Signs: “YIELD HERE TO PEDESTRIANS” at crosswalk

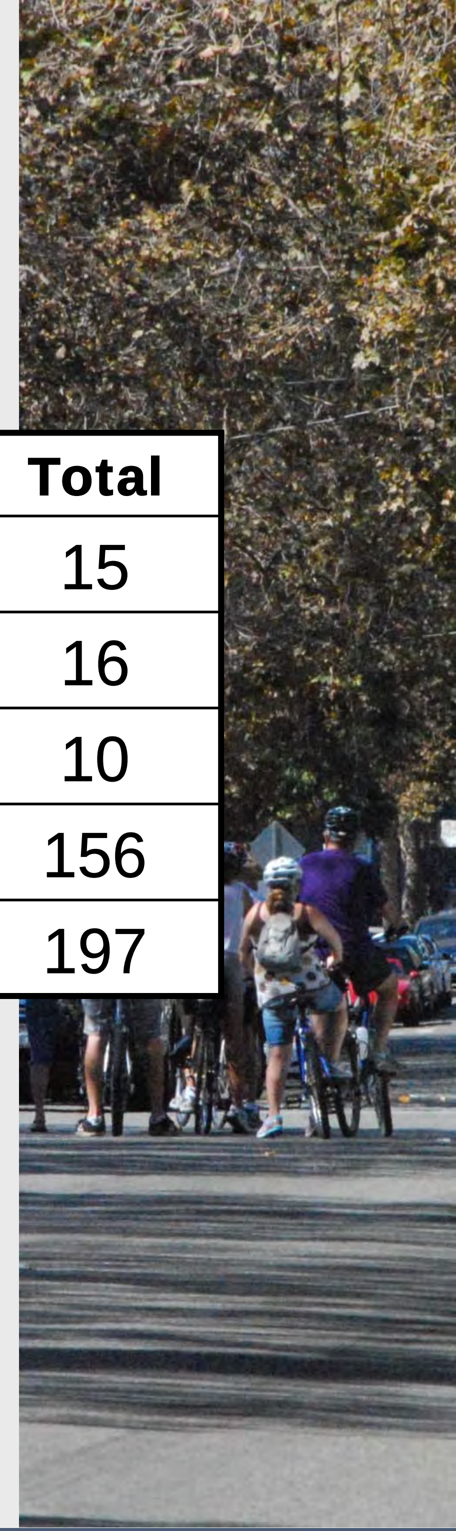


Traffic Analysis (cont.)

Driveway Counts:

	North / East	South / West	Total
Pacific/Main to Lincoln	14	1	15
Lincoln to Third/Taylor	12	4	16
Third/Taylor to Fourth	9	1	10
Fourth to Sherman/Encinal	86	70	156
Total	121	76	197





One-Way Cycle Track
(Protected Bike Lanes)



Central Avenue Proposed Street Concept

Two-Way Cycle Track



Central Avenue Proposed Street Concept